



Attorney Docket No. AFFY-003/26US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Stephen A. FODOR et al.

Confirmation No.: 3654

Application No.: 10/694,541

Group Art Unit: 1634

Filed: October 28, 2003

Examiner: Jeanine A. Goldberg

For: ARRAYS FOR DETECTING NUCLEIC ACIDS

U.S. Patent and Trademark Office
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO Form 1449 for the above-identified patent application.

- ☒ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☒ A return receipt postcard is also enclosed.
- ☒ Please charge **\$0.00** to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Respectfully submitted,
COOLEY GODWARD LLP

Dated: May 4, 2007

USPTO Customer No. 33522
COOLEY GODWARD KRONISH LLP
ATTN: Patent Group
1200 19th Street NW, 5th Floor
Washington, DC 20036
Tel: (202) 842-7800
Fax: (202) 842-7899

By:

Brn. Wm. M. Ludg.
for Michael S. Tuscan
Reg. No. 43,210 43,255



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of Stephen P.A. FODOR *et al.* Confirmation No.: 3654

Application No.: 10/694,541

Group Art Unit: 1634

Filed: October 28, 2003

Examiner: Jeanine A. Goldberg

For: Arrays for Detecting Nucleic Acids

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Service Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(b)

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97
and 1.98.

- [x] Pursuant to 37 C.F.R. §1.98, copies of documents 1-5, 47, 48, 122-694 cited in the attached Form PTO-1449 are enclosed. **Copies of these documents may be found in the accompanying four (4) boxes submitted with this information disclosure statement. For the Examiner's convenience, the documents have been arranged within the boxes in the exact order in which they have been listed in the PTO-1449 forms submitted herewith.**
- [] Copies of the remaining publications listed on the attached Form PTO-1449 are not being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos.: to which the above-identified application claims priority under 35 U.S.C. §120.
- [] Copies of documents that were not submitted in the above-mentioned related United States Patent Applications may be found in related United States Patent Application Nos.:
Should the Examiner be unable to locate a document, a copy will be provided upon request.

- ☒ [x] No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO-1449 are being provided pursuant to 37 C.F.R. §1.98.
- ☐ [] Documents _____ were cited by the Examiner in an Office Action mailed _____, in Applicants' related U.S. Application no. _____.
- ☐ [] Document _____ was cited in an IDS and submitted to the Office in several of Applicants' pending related U.S. Applications.
- ☒ [x] Applicants understand that MPEP § 2001.06(c) only requires disclosure of litigation where the subject matter for which a patent is being sought is or has been involved in litigation. Applicants will work with the Examiner to determine what particular information from any given litigation might be relevant to the instant application, if any. Given that opponents of Affymetrix (the assignee of the instant application) have sought in the past and may seek in the future to expand the scope of the requirements under the MPEP, Applicants herein provide the Examiner with an overview of all potentially relevant litigation and other *inter partes* proceedings so that the Examiner may also make independent determinations in that regard.
- ☒ [x] Affymetrix, the assignee of the instant application, was a party in three patent infringement actions originally filed in 1998. *Affymetrix, Inc. v. Hyseq, Inc.*, was filed in the Northern District of California on August 18, 1998, and given the docket number 98cv3192 FMS. U.S. Patents 5,744,305, 5,800,992 and 5,795,716 (the "the '305 patent," "the '992 patent," and "the '716 patent," respectively) were asserted in this litigation. Upon reassignment of the case to Judge Fogel, Northern District of California (San Jose Division), the case was renumbered as 99cv21163. The '305 patent generally claims arrays of nucleic acids comprising at least 400 different nucleotides/cm². The '992 patent generally claims methods of detecting nucleic acids in two or more collections of nucleic acids. The '716 patent generally claims computer program products and systems for identifying an unknown base in a sample. Appendix A contains the independent claims of each patent.

The instant application (U.S. application no. 10/125,428) is a continuation of application Ser. No. 09/670,563, filed Sep. 27, 2000; which is a continuation of application Ser. No. 09/362,089, filed Jul. 28, 1999; which is a divisional of application Ser. No. 09/056,927, filed Apr. 8, 1998, pending; which is a continuation of application Ser. No. 08/670,118, filed Jun. 25, 1996, now U.S. Pat. No. 5,800,992. The instant application and U.S. Patent 5,744,305 share a common parent application in U.S. application no. 07/492,462, now abandoned. U.S. Patent 5,795,716 is not related by priority claim to the instant application.

Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc., Civil Docket No. 98cv6 GMS, was filed in the District of Delaware on January 6, 1998. In this case, U.S. Patent 5,445,934 (the '934 patent) was asserted. Upon transfer to the Northern District of California (San Francisco Division), the case was renumbered 98cv4507. Upon reassignment of the case to Judge Fogel, Northern District of California (San Jose Division), the case was renumbered 99cv21164. The '934 patent generally claims substrates and arrays of oligonucleotides at different densities. Appendix B contains the independent claims of the patent. The instant application and U.S. Patent 5,445,934 share a common parent application in U.S. application no. 07/492,462, now abandoned.

The third case, *Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc.*, Civil Docket No. 98cv520 JJF, was filed in the District of Delaware on September 1, 1998. It was later assigned to GMS. In this case, the '305 and '992 patents were asserted. Upon transfer to the Northern District of California (San Francisco Division), the case was renumbered as 98cv4508. Upon reassignment of the case to Judge Fogel, Northern District of California (San Jose Division), the case was renumbered as 99cv21165. Appendix A contains the independent claims of each patent.

In the course of the above described litigations, Incyte and Synteni alleged that at least the '992 patent was invalid and unenforceable due to lack of enablement under 35 U.S.C. § 112, first paragraph. Incyte and Synteni submitted as evidence, a declaration from Dr. Michael C. Pirrung (document 176 in the attached Form 1449). Dr. Pirrung is an inventor of the instant pending claims. The declaration specifically pertains to US Patent 5,800,992, and is potentially material to the prosecution of the claims of the instant application as it conveys Dr. Pirrung's opinion regarding non-enablement of the VLSIPS method of nucleic acid synthesis, which is one disclosed method that may be used to make the claimed beads. Equally relevant, however, are Document Nos. 177- 179 in the attached Form 1449 from the same litigation (declarations of Fodor, Leighton Read and Stryer) which discuss Dr. Pirrung's limited involvement in the nucleic acid synthesis program at Affymetrix as well as his strained relationship with the Affymetrix scientists.

For instance, as stated in Document 177 at paragraphs 5-6 (Fodor declaration):

Dr. Pirrung left Affymax [(Affymetrix)] towards the end of 1989, apparently to take up an academic position at Duke University. Since that time, Dr. Pirrung has had only occasional contact with my research group at Affymax. He has not been involved with my research group in any experimental work to develop nucleic acid arrays at Affymetrix or Affymax.

Similarly, as stated in Document 178 at paragraph 11 (Leighton Read declaration):

I am not aware that Dr. Pirrung had any direct participation in experimental work relating to DNA arrays much after the first US priority patent application filing in June 1989, at Affymax. I also have no reason to believe that Dr. Pirrung was aware of the details of experimental work on DNA arrays, and in particular the results being obtained, after he left Affymax. It is not at all clear to me, therefore, that Dr. Pirrung would have any first-hand knowledge of the detail of the results or conclusions being drawn at Affymax in 1990 as he purports to discuss in his declaration.

With regard to the relationship between Drs. Fodor and Pirrung, Dr. Stryer states, "I was aware as early as 1990 that the professional relationship between Dr. Fodor and Dr. Pirrung was strained" (Document 179 at 6) (Stryer Declaration). Dr. Leighton Read also recollects on the strained relationship between Drs. Fodor and Pirrung in her declaration (Document 178 at 7-10), and particularly the apparent jealousy exhibited by Dr. Pirrung toward the success of Dr. Fodor. For instance, she states, "By late 1989, Dr. Pirrung was seemingly getting increasingly frustrated at the success of Dr. Fodor and his work . . . Although Dr. Pirrung was trying to stake a claim in the field after leaving Affymax, it was Dr. Fodor who received the greatest public attention" (Document 178 at paragraphs 8 and 10).

Also relevant are documents 661 and 662 (Board Decisions in Interferences 104,358 and 104,359), which show that on at least two occasions the Board of Patent Appeals & Interferences has determined that Pirrung's work, in fact, supported enablement (details of these two interferences are discussed below). In particular, they found that a 1995 article by Pirrung discussing problems with light-directed, solid-phase DNA synthesis supported enablement:

Perfection or optimization of an invention, however is not a requirement of enablement. [Cite omitted.] Nowhere does Pirrung state that the light-directed method of synthesis will not work. In fact, Pirrung states that light-directed synthesis is advantageous for preparing large, high density arrays of polymer sequences to enable sequencing-by-hybridization.

Document No. 661 at 10 and Document No. 662 at 11. In both cases, the Board concluded that Incyte had "failed to establish a threshold case by a preponderance of the evidence that Fodor's disclosure would not have enabled one skilled in the

art to make and use the claimed invention.” Document No. 661 at 11 and Document No. 662 at 11.

- [x] The above described litigations were settled by the parties. Before settlement, a motion for partial summary judgment of claims 1-3 of the ‘992 patents was granted, rendering said claims invalid in relation to the term “substantially complementary.”
- [x] Applicants bring the following additional information to the Examiner's attention pending Civil Action No. 04-901-JJF in the U.S. District Court for the District of Delaware. Applicants note that this civil action involves multiple patents, including U.S. Patent Nos. 5,545,531; 5,795,716; 6,355,432; 6,399,365; 6,646,243 and 6,607,887, owned by the assignee of this application, and the action is stylized as Affymetrix v. Illumina. The claims of the ‘432 patent and some of the claims of the ‘243 patent are generally directed to collections of encoded beads which have binding polymers of different target specific sequence attached thereto or to substrates comprising beads, spheres or particles comprising nucleic acids attached thereto. The asserted claims of the litigation are listed in Appendix C

The following references have been cited by Illumina as relevant to the patentability of various “bead” and other claims under 35 U.S.C. §§ 102 or 103 (a copy of Defendant Illumina, Inc.’s Identification of Invalidity Defenses Pursuant to 35 U.S.C. § 282 is attached as Exhibit 20):¹

Asserted claims 2, 5, 8, and 9 of US 6,355,432 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- EP 0392546
- Crkvenjakov et al. “Miniaturization of Sequencing by Hybridization (SBH): A Novel Method For Genome Sequencing” abstract no. P37, DOE/NIH Human Genome Contractors/Grantee Workshop (Nov. 1989)
- Drmanac / Crkvenjakov et al. “Miniaturization of Sequencing by Hybridization (SBH): The ‘Sequencing Chip’ Concept” 19 pages, poster, exact publication date in 1989 and source unknown
- Crkvenjakov, R. and R. Drmanac, “An Integral Approach for Complex Genome Studies,” research proposal submitted Office of Health and Environmental Research, U.S. Department of Energy, 54 pages (Oct. 1990)

¹ The following references are provided in the attached Form 1449, or have been previously cited in the instant collection.

- Drmanac, R., et al., "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization," 2 pages, publication date and source unknown
- Drmanac et al., "Prospects for a Miniaturized, Simplified and Frugal Human Genome Project," Sci. Yugoslav. 16(1-2):97-107 (1990)
- Drmanac, R., et al., "Prospects For Miniaturized, Simplified And Frugal Human Genome Project: The 'Sequencing Chip' Concept," 10 pages, publication source unknown (Oct. 1989)
- Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)
- Crkvenjakov, Talk presented at DOE/NIH Human Genome Sequencing Conference in Santa Fe, NM
- Crkvenjakov, "Sequencing of Megabase Plus DNA by Hybridization: Method Development ENT," Excerpts from DOE Grant No. DE-FB02-88ER60699, 18 pages (October 1990)

Asserted claims 2 US 6,355,432 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,219,763

Asserted claims 2, 5, 8, and 9 of US 6,355,432 are alleged to be invalid under 35 U.S.C. § 103 based on:

- CA 1248873 in combination with EP 0392546
- GB 1561042 in combination with EP 0392546
- US 5,028,545 in combination with EP 0392546
- US 5,291,763 in combination with EP 0392546

Asserted claims 2, 5, and 8 of US 6,355,432 are alleged to be invalid under 35 U.S.C. § 103 based on:

- CA 1248873 in combination with US 5,348,855
- GB 1561042 in combination with US 5,348,855

Asserted claims 14, 16, 18, 19, 20, 21, 22, 24, 26, 35, 36, 39, 40, and 43 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Stodolsky, M., "Sequencing By Hybridization (SBH) The Rasomir Crkvenjakov Laboratory in 1989," 4 pages, (June 1989)

- Drmanac, R., et al., "Prospects For Miniaturized, Simplified And Frugal Human Genome Project: The 'Sequencing Chip' Concept," 10 pages, publication source unknown (Oct. 1989)
- EP 0392546
- Drmanac, R., et al., "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization," 2 pages, publication date and source unknown
- Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)
- Drmanac / Crkvenjakov et al. "Miniaturization of Sequencing by Hybridization (SBH): The 'Sequencing Chip' Concept" 19 pages, poster, exact publication date in 1989 and source unknown
- Stodolsky, "Sequencing by Hybridization (SBH) R&D at the Center for Genetic Engineering in Belgrade, Yugoslavia: The Radomir Crkvenjakov Laboratory in 1989," 6 pages, (publication location and exact date in 1989 unknown)

Asserted claims 14, 16, 18, 19, 20, 21, 22, 24, 26, 35, 36, 39 and 40 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Crkvenjakov, R. and R. Drmanac, "An Integral Approach for Complex Genome Studies," research proposal submitted Office of Health and Environmental Research, U.S. Department of Energy, 54 pages (Oct. 1990)

Asserted claims 14, 15, 18, 19, 20, 21, 22, 24, 26, 35, 39, 40, and 43 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,700,637

Asserted claims 14, 15, 16, 18, 19, 20, 21, 22, 24, 26, 35, 36, 39, and 40 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Drmanac et al., "Prospects for a Miniaturized, Simplified and Frugal Human Genome Project," Sci. Yugoslav. 16(1-2):97-107 (1990)

Asserted claims 14, 15, 19, 20, 21, 22, 26, 35, 39, 40 and 43 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Drmanac, R., et al., "Prospects For Miniaturized, Simplified And Frugal Human Genome Project: The 'Sequencing Chip' Concept," 10 pages, publication source unknown (Oct. 1989)

Asserted claims 14, 15, 16, 18, 19, 20, 21, 22, 24, 26, 35, 36, 39, and 40 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 103 based on:

- CA 1248873 in combination with US 5,028,545
- CA 1248873 in combination with EP 0392546
- CA 1248873 in combination with US 5,348,855

Asserted claims 14, 16, 18, 19, 20, 21, 22, 24, 26, 35, 36, 39, and 40 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 103 based on:

- EP 0392546 in combination with US 4,877,965

Asserted claims 14, 18, 20, 21, 26, 35, 36, 39, and 40 of US 6,646,243 are alleged to be invalid under 35 U.S.C. § 103 based on:

- EP 0392546 in combination with US 5,028,545

Asserted claims 1-4 of US 5,545,531 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 6,270,961
- US 5,807,522
- WO 93/17126
- US 6,103,463
- US 6,140,044
- Maskos, U., A Novel Method Of Nucleic Acid Sequence Analysis, Doctoral Thesis, Univ. of Oxford, 165 pages (1991)
- WO 95/09248
- Format 3 SBH Super Chip

Asserted claims 1, 5, and 9 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)
- Maskos, U. and E.M. Southern 'A Study of Oligonucleotide Reassociation Using Arrays of Oligonucleotides Synthesized on a Glass Support,' Nucl. Acids Res. 21:4663-4669, Oxford University Press, Oxford, England (1993)
- Drmanac, R., et al., "SBH and the Integration of Complementary Approaches in the Mapping, Sequencing, and Understanding of Complex Genomes," The Second International Conference on Bioinformatics, Supercomputing and Complex Genome Analysis: Proceedings of the June 4-7, 1992 Conference at St. Petersburg Beach, Florida. pp. 121-134, (1993)

Asserted claims 10 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 103 based on:

- Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992) in combination with US 5,171,534
- Maskos, U. and E.M. Southern 'A Study of Oligonucleotide Reassociation Using Arrays of Oligonucleotides Synthesized on a Glass Support,' Nucl. Acids Res. 21:4663-4669, Oxford University Press, Oxford, England (1993) in combination with US 5,171,534

Asserted claims 1, 5, 9, and 10 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,700,637
- Drmanac, R., et al., "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing," Science 260:1649-1652, American Association for the Advancement of Science, Washington D.C. (1993)
- Report on the Sequencing by Hybridization Workshop, Moscow, USSR (November 19-20, 1991)
- Mirzabekov, A.D., "DNA sequencing by hybridization--a megasequencing method and a diagnostic tool?," TIBTECH 12:27-32, Elsevier Science Publishers B.V., Amsterdam, The Netherlands (1994)
- Khrapko et al., "A method for DNA sequencing by hybridization with oligonucleotide matrix," DNA Sequence – J. DNA Sequencing and Mapping 1:375-388 (1991)
- Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)
- EP 0514927 A1

Asserted claims 1 and 5 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,525,464
- US 5,202,231
- Elder, J.K., "Image Processing in Nucleic Acid Sequence Analysis," 166 pages, A thesis submitted for the degree of Doctor of Philosophy, University of Oxford (1993)

Asserted claims 9 and 10 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,525,464 in combination with US 5,700,637

Asserted claims 1, 5, and 10 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- Drmanac, R., et al., "Sequencing of Megabase Plus DNA by Hybridization: Theory of the Method" Genomics 4:114-128, Academic Press, San Diego, California (1989)
- Strezoska, Z., et al., "DNA sequencing by hybridization: 100 bases read by a non-gel-based methods," Proc. Natl. Acad. Sci. USA 88:10089-10093, National Academy of Sciences, Washington, D.C. (1991)
- Kreindlin et al., "A Sequenator for Analysis of Diagnostic and Sequencing Microchips," Int'l. Workshop on Sequencing by Hybridization, 2 pages (October 29-30, 1993)
- Lysov et al., "A New Method for Determining the DNA Nucleotide Sequence by Hybridization with Oligonucleotides," Abstract of Human Genome I: An International Conference on the Status and Future of Research on the Human Genome (October 1989)
- Mirzabekov, "Sequencing of DNA by Hybridization with oligonucleotides matrix (SHOM)," Engelhardt Institute of molecular Biology Grant Application (March 1992) ("Mirzabekov Grant Application, 1992")
- Khrapko et al., "Hybridization of DNA with Oligonucleotides Immobilized in Gel: A Convenient Method for Detecting Single Base Substitutions," Molecular Biology 25:581-591 (Dec. 1991) (Russian original: volume 25(3), pp. 718-730, May-Jun. 1991)
- US 4,811,218

Asserted claims 1, 5, and 10 of US 5,795,716 are alleged to be invalid under 35 U.S.C. § 103 based on:

- US 4,802,101
- US 5,332,666
- US 5,306,618
- US 5,171,534

Asserted claims 1, 2, 7, 10, 17, 20-22, 24, 27-32, 35-37, 41, 44, 45, 55, and 58 of US 6,399,365 are alleged to be invalid under 35 U.S.C. § 103 based on:

- US 5,143,854
- US 5,700,637

- Drmanac, R., et al., "SBH and the Integration of Complementary Approaches in the Mapping, Sequencing, and Understanding of Complex Genomes," The Second International Conference on Bioinformatics, Supercomputing and Complex Genome Analysis: Proceedings of the June 4-7, 1992 Conference at St. Petersburg Beach, Florida. pp. 121-134, (1993) in combination with GB 2129551
- US 4,159,875
- US 4,430,299
- US 4,039,288
- US 4,595,562
- US 4,608,231
- US 4,675,299
- US 4,676,951
- US 4,678,894
- US 4,719,087
- GB 2129551

Asserted claims 1 and 7 of US 6,607,887 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,700,637
- US 5,171,534
- Drmanac, R., et al., "Sequencing of Megabase Plus DNA by Hybridization: Theory of the Method" Genomics 4:114-128, Academic Press, San Diego, California (1989)
- Strezoska, Z., et al., "DNA sequencing by hybridization: 100 bases read by a non-gel-based methods," Proc. Natl. Acad. Sci. USA 88:10089-10093, National Academy of Sciences, Washington, D.C. (1991)
- Drmanac, R., et al., "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing," Science 260:1649-1652, American Association for the Advancement of Science, Washington D.C. (1993)
- Drmanac, R., et al., "SBH and the Integration of Complementary Approaches in the Mapping, Sequencing, and Understanding of Complex Genomes," The Second International Conference on Bioinformatics, Supercomputing and Complex Genome Analysis: Proceedings of the June 4-7, 1992 Conference at St. Petersburg Beach, Florida. pp. 121-134, (1993)
- Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)

- EP 0514927 A1
- Elder, J.K., "Image Processing in Nucleic Acid Sequence Analysis," 166 pages, A thesis submitted for the degree of Doctor of Philosophy, University of Oxford (1993)
- Report on the Sequencing by Hybridization Workshop, Moscow, USSR (November 19-20, 1991)
- Kreindlin et al., "A Sequenator for Analysis of Diagnostic and Sequencing Microchips," Int'l. Workshop on Sequencing by Hybridization, 2 pages (October 29-30, 1993)
- Mirzabekov, "Sequencing of DNA by Hybridization with oligonucleotides matrix (SHOM)," Engelhardt Institute of molecular Biology Grant Application (March 1992) ("Mirzabekov Grant Application, 1992")
- US 4,811,218

Asserted claims 1 and 5 of US 6,607,887 are alleged to be invalid under 35 U.S.C. § 102 and 103 based on:

- US 5,202,231

Illumina has also asserted that the '243 patent is invalid because of inequitable conduct in relation to the failure to disclose to the U.S. Patent Office the above described litigation against Hyseq, Synteni and Incyte, in particular litigation in relation to the '922 patent and the Pirrung declaration as described above. These assertions have been disputed by Affymetrix .

Should the Examiner wish to review any documents in applicants possession related to this action, the Examiner is invited to contact the undersigned and any documents requested will be forwarded.

[x] European Opposition Proceedings:

Affymetrix has been a party in the following European Opposition proceedings, wherein a granted Affymetrix European patent was challenged:

1. EP 1086742

Opponent: Degussa AG

Status: Decision issued on July 26, 2006 affirming maintenance of the patent based on amendments made during the opposition. A copy of the Grounds for Decision, Interlocutory Decision, Maintenance of the Patent papers are included as Form 1449 documents 185-187.

Claims: The amended claims as accepted by the EP opposition division are generally directed to the use of a constraining means on a substrate for defining regions to react with a reactant solution in the manufacture of polymer array. The amended claims are attached as Exhibit 1.

Issues: Allegations of lack of novelty and inventive step.

References cited:

WO 89/10977

US 4,728,591

Declaration of Grant Morgan, in Japanese Patent Application No. 8-324451, 15 pages (dated September 16, 2002)

US 5,700,637

Claims as granted of EP 834575, 2 pages, (November 28, 2001)

Interlocutory decision in Opposition proceedings, in the Opposition to EP 0834575, 33 pages (dated January 24, 2005)

Analysis of ECLA classification of D1 and D2, 3 pages (submitted August 8, 2005)

WO 93/09668

EP 0 624 059 A0

WO 90/15070

Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis" Science 251:767-773, American Association for the Advancement of Science, Washington D.C. (1991)

EP 0 445 915 A1

US 4,834,946

2. EP 0834575

Status: Decision on maintenance of EP patent 0834575 issued on Jan. 24, 2005 based on amendments made during opposition proceedings. Decision on appeal pending. A copy of the Summary of Facts and Submissions, including preliminary opinion, Communication concerning Oral Proceeding Minutes, Interlocutory Decision, Summary of Facts and Submissions (dated January 24, 2005) and Notice of Appeal filed by Affymetrix are included as Form 1449 documents 192-196. Various other opposing parties appealed the same decision of the Opposition Division.

Claims: The amended claims as accepted by the EP opposition division are generally directed to methods for identifying target nucleic acids comprising providing an array of in excess of 100 different probes bound to a substrate in known locations and at a density of at least 1000 different probes/cm², applying a sample to obtain a hybridization pattern and comparing the pattern to a reference. The amended claims are attached as Exhibit 2.

Issues: Allegations of lack of novelty, inventive step, insufficient disclosure; and added subject matter.

References cited during Opposition and pending Appeal (by all parties, including Affymetrix):²

WO 90/15070

WO 89/10977

EP 0 063 810 A1

WO 90/05910 A1

² Applicants note that many references and declarations in relation to the opposition of EP 619 321 B1 (the '321 patent) were cited by various opposing parties, all of which are described below in relation to the '321 patent and are not repeated herein.

Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)

Ekins et al, "Development of Microspot Multi-Analyte Ratiometric Immunoassay Using Dual Fluorescent-Labeled Antibodies," Analytica Chimica Acta 227: 73-96, Elsevier, Amsterdam, The Netherlands (1989)

WO 92/10588

US 07/362,901

US 07/492,462

US 07/624,114

WO 90/03382

EP 0 171 150 A1

WO 84/03151

Dattagupta et al., "Rapid identification of Microorganisms by Nucleic Acid Hybridization after Labeling the Test Sample," Anal. Biochem. 177:85-89, Academic Press, New York, New York (1989)

Khrapko et al., "An oligonucleotide hybridization approach to DNA sequencing" FEBS Lett. 256(1):118-122, North-Holland on behalf of the Federation of European Biochemical Societies, Amsterdam, The Netherlands (Oct. 1989)

EP 0 392 546

WO 89/11548

McGall et al. "The Efficiency of Light-Directed Synthesis of DNA Arrays on Glass Substrates," J. Am. Chem. Soc. 119(22):5081-5090, American Chemical Society, Washington, D.C. (1997)

Golub et al, "Molecular Classification of Cancer: Class Discovery and Class Prediction by Gene Expression Monitoring," Science 286:531-537 (1999)

Southern et al. "Parallel synthesis and analysis of large numbers of related chemical compounds: applications to oligonucleotides," Journal of Biotechnology 35:217-227 (1994)

Declaration of Professor Anthony Edward George Cass, in the matter of EP application no. 99202455.4, 25 pages (undated)

Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)

Declaration of Dr. James Gerard Wetmur, in the matter of EP 0 834 575, 18 pages (dated October 28, 2003)

Pease et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis," Proc. Natl. Acad. Sci. USA 91:5022-5026, National Academy of Sciences, Washington D.C. (1994)

Lipshutz et al., "Using Oligonucleotide Probe Arrays To Access Genetic Diversity," BioTechniques. 19(3):442-447, Eaton Publishing Co., Natick, Massachusetts (1995)

Janowski et al., "Aminopropylsilane Treatment for the Surface of Porous Glasses Suitable for Enzyme Immobilisation," J. Chem. Tech. Biotechnol. 51:263-272 (1991)

Kazazlan, "Chapter 14. Use of PCR in the Diagnosis of Monogenic Disease," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 153-169 (1989)

Erlich and Bugawan, "Chapter 16. HLA Class II Gene Polymorphism: DNA Typing, Evolution, and relationship to Disease Susceptibility," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 193-204 (1989)

Downs et al., "New DNA Technology and the DNA Biosensor," Analytical Letters 20(12):1897-1927 (1987)

EP 0 619 321 B1

Submission by Opponent 2 Metragen, Inc.(Successor-In-Interest to Protogene Laboratories, Inc.) in opposition to European Patent No 0 619 321, 57 pages (dated September 27, 2003)

Statement of Dr. Paul H. Silverman in the opposition to EP 0619321, 7 pages (dated July 25, 2003)

Coassin, Meeting with Affymax Researcher at Human Genome III Poster Presentation, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)

Silverman, Affymax and Human Genome III, Oct. 21-23, San Diego, 2 pages, in the opposition to EP 0619321 (submitted July 29, 2003)

Declaration of Dennis W. Solas, in U.S. Patent and Trademark Office Interference Proceeding No. 104,359, 9 pages (dated May 28, 1999)

US 5,424,186

OGT v. Affymetrix, Affymetrix' Opening Submissions, HC 1999 02517, HC 1999 04645 (March 22,2001) 81 pages (submitted July 29, 2003)

Chronology of the Patentee's Efforts to Develop Polynucleotide Arrays, in the opposition to EP 0619321, 5 pages (submitted July 29, 2003)

Prosecution history of US application 07/362,901, 55 pages, in the opposition to EP 0619321 (submitted July 29, 2003)

US 5,143,854

Barinaga, M., "Will 'DNA Chip' Speed Genome Initiative?" Science 253:1489, American Association for the Advancement of Science, Washington D.C. (Sep. 27, 1991)

In the matter of Oxford Gene Technologies v. Affymetrix, Inc., Court transcript of November 8, 2000, 21 pages, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)

Chronology of the Patentee's Efforts to Reduce Region Size, in the opposition to EP 0619321, 6 pages (submitted July 29, 2003)

Sheldon et al., "Matrix DNA Hybridization," Clin. Chem. 39(4):718-719, American Association For Clinical Chemistry, Washington, D.C. (1993)

Fodor et al., "DNA Sequencing by Hybridization," Address by Stephen Fodor before The Robert A. Welch Foundation, 37th Annual Conference on Chemical Research 40 Years of the DNA Double Helix, Houston, Texas, October 25 & 26, 1993, pp. 3-9 (1993)

Jacobs et al., "Combinatorial chemistry – applications of light-directed chemical synthesis," TIBTECH 12:19-26 (1994)

Gallop et al., "Applications of Combinatorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," J. Med. Chem. 37:1233-1251 (1994)

Lipshutz et al., "Advanced DNA sequencing technologies," Current Opinion in Structural Biology 4:376-380 (1994)

Wrotnowski, "Biochip Technology Offers Powerful Tool for Research and Diagnostics," 1page, Genetic Engineering News (1994)

US 5,959,098

McGall et al., "Light-directed synthesis of high-density oligonucleotide arrays using semiconductor photoresists," Proc. Natl. Acad. Sci. USA 93:13555-13560 (1996)

Beecher et al., "Chemically Amplified Photolithography for the Fabrication of High Density Oligonucleotide Arrays," Polym. Mater. Sci. Eng. 76: 597-598 (1997)

Anderson et al., "Polynucleotide Arrays for Genetic Sequence Analysis," Topics in Current Chemistry 194:117-129 (1997)

Lipshutz et al., "High density synthetic oligonucleotide arrays," Nature Genet., suppl. 21:20-24 (1999)

Barone et al., "Photolithographic Synthesis of High Density Oligonucleotide Probe Arrays," Nucleosides, Nucleotides & Nucleic Acids 20(4-7):525-531 (2001)

US 5,658,734

US 6,083,697

Amendment filed with the United States Patent Office during prosecution of application no. 08/466,632, dated September 23, 1996, 8 pages (submitted July 29, 2003)

Declaration of Dr. Marc M. Greenberg, in the opposition to EP 0619321, 11 pages (dated July 28, 2003)

Curriculum vitae of Marc M. Greenberg, 25 pages (publication date unknown)

Venkatesan et al., "Improved Utility of Photolabile Solid Phase Synthesis Supports for the Synthesis of Oligonucleotides Containing 3'-Hydroxyl termini," J. Org. Chem. 61:525-529 (1996)

Pirrung et al., "3'-Nitrophenylpropyloxycarbonyl (NPPOC) Protecting Groups for High-Fidelity Automated 5'→3' Photochemical DNA Synthesis," Organic Letters 3(8): 1105-1108 (2001)

Beier et al., "Synthesis of Photolabile 5'-O-Phosphoramidites for the Photolithographic Production of Microarrays of inversely Oriented Oligonucleotides," Helvetica Chimica Acta 84:2089-2095 (2001)

Wolter et al., "Polymer support oligonucleotide synthesis XX1): Synthesis of a Henhectacosa Deoxynucleotide by use of a dimeric phosphoramidite synthon," Nucleosides & Nucleotides 5(10):65-77 (1986)

Sondek et al., "A General Strategy for Random Insertion and Substitution Mutagenesis: Substoichiometric Coupling of Trinucleotide Phosphoramidites," Proc. Natl. Acad. Sci. USA 89(8):3581-3585 (2003)

Virnekas et al., "Trinucleotide phosphoramidites: ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis," Nucl. Acids Res. 22:5600-5607 (1994)

- Zehavi et al., "Light-Sensitive Glycosides. 1. 6-Nitroveratryl β -D-Glucopyranoside and 2-Nitrobenzyl β -D-Glucopyranoside," J. Org. Chem. 37(14):2281-2285, American Chemical Society, Washington, D.C. (1972)
- Zehavi et al., "Light-Sensitive Glycosides. II. 2-Nitrobenzyl 6-Deoxy- α -L-mannopyranoside and 2-Nitrobenzyl 6-Deoxy- β -L-galactopyranoside," J. Org. Chem. 37(4):2285-2288 (1972)
- Usman et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an Escherichia coli Formylmethionine tRNA," J. Am. Chem. Soc. 109:7845-7854 (1987)
- Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," Nucl. Acids Res. 23(14):2677-2684 (1995)
- Scaringe et al., "Novel RNA Synthesis Method Using 5'-O-Silyl-2'-O-orthoester Protecting Groups," J. Am. Chem. Soc. 120:11820-11821 (1998)
- Stipp, "Gene Chip Breakthrough; Microprocessors have reshaped our economy, spawned vast fortunes, and changed the way we live. Gene chips could be even bigger," Fortune, p. 56 -6 page transcript (March 31, 1997)
- Online European Patent Register – Results, EP 0373203 record printout from July 28, 2003, in the opposition to EP 0619321, 3 pages (submitted July 29, 2003)
- Declaration of Edwin Mellor Southern, in the opposition to EP 0373203, with exhibits, 22 pages (January 16, 1998)
- First Confidential Witness Statement of Alan-Philippe Blanchard, in the opposition to EP 0619321, 4 pages (dated January 19, 2001)
- Expert Report of David Bowen Wallace, P.E., Ph.D., in the opposition to EP 0619321, 59 pages (dated January 18, 2001)
- Response of Affymetrix Inc. (Opponent VII) to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, in the opposition to EP 0619321, 50 pages (submitted July 29, 2003)
- Reply of Affymetrix, Inc. to Oppositions by Incyte Pharmaceuticals, Inc., Protogene Laboratories, Inc., Multilyte Ltd. and Oxford Gene Technology Limited against European Patent No. 0 619 321, 82 pages (submitted October 17 2000)
- Interlocutory decision in the Opposition Proceedings, in the matter of EP 0373203, 25 pages (dated February 26, 2002)

Summons to Attend Oral Proceedings Pursuant to Rule 71(1) EPC with annexes, 8 pages, in the matter of EP 0 619 321 (dated January 24, 2003)

EP 0 373 203 B1

Agilent Technologies, "SurePrint technology," 14 pages (2003)

Results of experiments performed by Opponent 4, in the matter of EP 0 834 575, 3 pages (submitted October 1, 2004)

Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis" Science 251:767-773, American Association for the Advancement of Science, Washington D.C. (1991)

McGillis, "Lithography," VLSI Technology, McGraw-Hill Book Company, Chapter 7, pp. 267-300, John Wiley & Sons, New York, New York, USA (1983)

Newman et al., "High resolution patterning system with a single bore objective lens," J. Vac. Sci. Technol. B. 5(1):88-90 (1987)

US 4,542,102

US 4,713,326

"fingerprinting," in Dictionary of Science and Technology, Walker, Ed., Published by Larousse, p. 421 (1995)

Augenlicht, "Gene Expression in Human Colonic Biopsies," in Basic and Clinical Perspectives of Colorectal Polyps and Cancer, Ed. Steele, G. et al., Alan R. Liss, Inc. NY, pp 195-202 (1988)

Declaration of Professor John Sutherland, in the matter of EP 0 834 575, 13 pages (dated November 17, 2004)

Declaration of Stephen Philip Alan Fodor, in the matter of EP 0 834 575, 15 pages (dated November 17, 2004)

"distinguish," and "identify," in Oxford Advanced Learner's Dictionary of Current English, Cowie, Ed., Oxford University Press pp. 350, 615 and 616 (1989)

U.S. Patent 5,491,224

U.S. Patent 6,054,270

Declaration by Julian Gordon for Opposing party Abbott Laboratories and Combimatrix Corp. in the matter of EP 0 834 575 B, 14 pages (dated May 24, 2005)

Minutes of the public oral proceedings in EP 0373203 dated October 12, 2005

Maskos et al., "A novel method for the analysis of multiple sequence variants by hybridisation to oligonucleotides," Nucl. Acids Res. 19(21):2267-2268, Oxford University Press, Oxford, England (1993)

Lockhart et al. "Expression monitoring by hybridization to high-density oligonucleotide arrays," Nat. Biotechnol. 14:1675-1680, Nature Publishing Co., New York, New York (1996)

Chee et al., "Accessing Genetic Information with High-Density DNA Arrays," Science 274:610-614, American Association for the Advancement of Science, Washington D.C. (1996)

3. EP 0764214

Opponent(s): Clondia Chip Technologies GmbH (Germany)

Status: Opposition was filed on May 31, 2006. Response by patentee not yet filed. A copy of the Opposition is included as Form 1449 document 257.

Claims: The granted, opposed claims are generally directed to methods of packaging probe chips and packaged probe chips comprising a chip mated to a package and an alignment structure for placing the package at a desired location with respect to a scanner. The opposed claims are attached as Exhibit 3.

Issues: Allegations of lack of novelty and inventive step, allegations that the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, and that the subject matter of the patent extends beyond the content of the application as filed.

References cited:

EP 0 353 592 A2

WO 92/10587

US 5,310,469

WO 90/05910 A1

WO 93/09668

EP 0 212 314 A2

WO 90/15070

WO 92/10588

WO 92/10092

WO 93/22053

EP 0 378 968 A2

EP 0 378 968 A3

US 3,690,836

WO 93/22058

WO 89/10977

Copy of Minutes dated April 15, 2006 from oral proceedings in the opposition against EP 695 941 B1

WO 93/22680

US 4,016,855

US 5,320,808

US 4,204,929

US 5,300,779

4. EP 0972564

Opponent(s): Applera Corp.

Status: The opposition was filed on February 24, 2004. A copy of the Opposition is included as Form 1449 document 259. The patentee filed a response to the opposition on January 12, 2005, a copy of which is also included as Form 1449 document 260. In response to the opposition, the EPO summoned the parties to oral proceedings as reported in the EPO Communication dated July 19, 2005, a copy of which is included as Form 1449 document 261. Opponent, Applera, withdrew its opposition on February 3, 2006. The patentee submitted further evidence in response to the summons on June 9, 2006, and a separate third party submission alleging lack of priority, novelty and inventive step was submitted on June 12, 2006. A follow-up third party submission was filed on June 30, 2006. Copies of the patentee's further submission and the third party observations are included as Form 1449 documents 262-263. The oral proceedings resulted in the EP patent being revoked. A copy of the Decision to revoke the patent and the minutes from the oral proceeding are included as Form 1449 documents 264. On October 9, 2006, the patentee filed a Notice of Appeal against the Decision of the Opposition Division. A copy of the grounds for appeal as filed on December 7, 2006 is included as Form 1449 document 265.

Claims: The granted, opposed claims are generally directed to methods of forming polymer arrays comprising a substrate and 100 or more groups of polymers with diverse, known sequences coupled to the surface thereof in discrete known locations at a density of at least 1000 per cm², wherein the known locations are separated from one another by inert regions and wherein the

polymers are delivered to the locations by spotting. The claims on appeal are attached as Exhibit 4.

Issues: Allegations of lack of novelty and inventive step, allegations that the patent lacks sufficiency, and that the patent adds subject matter over the divisional and parent applications.

References cited in Opposition:

Khrapko et al., "A method for DNA sequencing by hybridization with oligonucleotide matrix," DNA Sequence – J. DNA Sequencing and Mapping 1:375-388 (1991)

EP 0 063 810 A1

WO 92/10588

Lennon, G.G. and H. Lehrach, "Hybridization analyses of arrayed cDNA libraries," Trends Genet. 47(10):314-317, Elsevier Science Publishers B.V., Amsterdam, The Netherlands (1991)

Drmanac, R., et al., "Sequencing by hybridization: towards an automated sequencing of one million M13 clones arrayed on membranes," Electrophoresis 13:566-573, Verlag Chemie, Weinheim, Germany (1992)

WO 84/03151

EP 0 268 237 A2

EP 0 268 237 A3

US 3,281,860

US 4,121,222

Declaration of Professor Anthony Cass, in the Opposition to EP 0972564, 17 pages (dated January 5, 2005)

Declaration of Professor John David Sutherland, in the Opposition to EP 0972564, 11 pages (dated January 4, 2005)

WO 93/09668

EP 0 624 059 A0

US 07/796,243

US 07/874,849

Declaration of Professor John David Sutherland, in the Opposition to EP 0972564, 3 pages (dated June 7, 2006)

Declaration of Professor Jon Cooper, in the matter of EP application no. 99202441.4, 19 pages (dated November 14, 2002)

Declaration of Professor Anthony Cass, in the matter of EP application no. 99202441.4, 19 pages (dated November 13, 2002)

Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)

US 4,591,570

WO 90/15070

WO 89/10977

EP 0 445 915 A1

JP 63-223557

Additional References cited in Third Party Observations

US 5,770,721

5. EP 0695941

Opponent(s): Combimatrix Corporation

Status: Opposition was filed on April 28, 2003. The parties were summoned to oral proceedings to discuss the issues raised. See copy of summons, included as Form 1449 document 272. The oral proceedings were conducted on March 9, 2006, whereupon the patent was found to meet the requirements of the EPC, taking into account the auxiliary 5 amendments made at oral proceedings. A copy of the minutes of the oral proceeding and an annex of the auxiliary 5 amendments is included as Form 1449 documents 273-274.

Claims: The granted claims are generally directed to methods of making and using probe chips comprising forming a plurality of oligonucleotide arrays on a substrate, separating the substrate into a plurality of chips and mating the chips to a package comprising a reaction chamber, flowing labeled oligonucleotide target molecules through the reaction chamber wherein the package comprises an alignment structure and the package is placed at a desired location in said scanner using the alignment structure. The granted claims are attached as Exhibit 5.

Issues: Allegations of lack of novelty and inventive step, allegations that the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, and that the subject matter of the patent extends beyond the content of the application as filed.

References cited:

WO 90/15070 A1

WO 92/10587 A1

WO 92/10588

WO 92/10092

WO 93/09668

WO 93/22053 A1

EP 0 378 968 A2

US 3,690,836

WO 93/22058 A1

US 5,300,779

US 5,310,469

US 5,320,808

6. EP 0619321

Status: Ongoing

Claims: The amended claims as published with the Notice of Grant are generally directed methods of investigating by receptor/ligand binding a sequence by the use of a substrate with a surface comprising 10^3 predefined regions containing different nucleotide or amino acid sequences, said regions each occupying an area less than about $2.5 \times 10^{-3} \text{ cm}^2$, which method comprises labeling said sequence being investigated and identifying which sequences bind with the sequence being analyzed and the corresponding apparatus. The claims are attached as Exhibit 6.

Issues: Allegations of lack of novelty, inventive step and sufficiency of disclosure.

References cited:

Haridasan et al., "Peptide Synthesis using Photolytically Cleavable 2-Nitrobenzyloxycarbonyl Protecting Group," Proc. Indian Natn. Sci. Acad. 53A(6):717-728, Indian National Science Academy, New Delhi, India (1987)

Stuber et al., "Synthesis and photolytic cleavage of bovine insulin B22-30 on a nitrobenzoylglycyl-poly (ethylene glycol) support," Int. J.

Pept. Protein Res. 22(3):277-283, Munksgaard, Copenhagen, Denmark (1984)

Gazard et al., "Lithographic Technique Using Radiation-Induced Grafting of Acrylic Acid into Poly(Methyl Methacrylate) Films," Polymer Engineering and Science 20(16):1069-1072, Wiley & Sons, Chichester, England (1980)

Pillai, V.N., "Photoremovable Protecting Groups in Organic Synthesis," Synthesis, pp. 1-26 (1980)

Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis" Science 251:767-773, American Association for the Advancement of Science, Washington D.C. (1991)

EP 0 328 256

US 07/362,901

US 07/624,114

WO 89/10977

EP 0 063 810 A1

Khrapko et al., "An oligonucleotide hybridization approach to DNA sequencing" FEBS Lett. 256(1):118-122, North-Holland on behalf of the Federation of European Biochemical Societies, Amsterdam, The Netherlands (Oct. 1989)

Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)

WO 84/03151

Hanahan et al., "Plasmid Screening at High Colony Density," Methods Enzymol. 100:333-342, Academic Press, New York, New York (1983)

Lysov et al., "A New Method for Determining the DNA nucleotide Sequence by Hybridization with Oligonucleotides," Doklady Biochemistry 303:436-438 (May 1989) (Russian original volume 303(1-6):1508-1511 Nov.-Dec. 1988)

Stryer, L., "DNA Probes and Genes Can be Synthesized by Automated Solid-Phase Methods," from Biochemistry, Third Edition, published by W.H. Freeman & Co., pp. 123-124 (1988)

Gait, eds., pp. 1-115 (chapters 1-4) from Oligonucleotide Synthesis: A Practical Approach, IRL Press, London, England (1984)

Caruthers, M.H., "Gene Synthesis Machines: DNA Chemistry and Its Uses," Science 230:281-285, American Association for the Advancement of Science, Washington D.C. (1985)

US 5,800,992

US 5,744,305

US 5,445,934

WO 92/10092

Declaration under 37 C.F.R. 1.132, Ann M. Pease, in the prosecution of US 07/624,114, 8 pages (dated August 12, 1992)

Pease et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis," Proc. Natl. Acad. Sci. USA 91:5022-5026, National Academy of Sciences, Washington D.C. (1994)

Fodor et al., "Multiplexed biochemical assays with biological chips," Nature 364:555-556, Macmillan Journals Ltd., London, England (1993)

Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis" Science 251:767-773, American Association for the Advancement of Science, Washington D.C. (1991)

Silverman, Notes Concerning the HUGO Sequencing By Hybridization Workshop, Moscow (18 -21 November 1991) , 7 pages

McGall et al. "The Efficiency of Light-Directed Synthesis of DNA Arrays on Glass Substrates," J. Am. Chem. Soc. 119(22):5081-5090, American Chemical Society, Washington, D.C. (1997)

Pirrung, NIH grant application, 21 pages (publication date unknown)

Declaration of Michael C. Pirrung, in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C98-4508 FMS (MEJ), 21 pages (dated March 19, 1999)

Pirrung et al., "Proofing of Photolithographic DNA Synthesis with 3'.5'-Dimethoxybenzoinyloxycarbonyl-Protected Deoxynucleoside Phosphoramidites," J. Org. Chem. 63(2):241-246, American Chemical Society, Washington, D.C. (1998)

Pirrung et al., "Comparison of Methods for Photochemical Phosphoramidite-Based DNA Synthesis," J. Org. Chem. 60:6270-6276, American Chemical Society, Washington, D.C. (1995)

Blawas et al., "Step-and-Repeat Photopatterning of Protein Features Using Caged-Biotin-BSA: Characterization and Resolution," Langmuir 14(15):4243-4250, American Chemical Society, Washington, D.C. (1998)

Sundberg et al., "Spatially-Addressable Immobilization of Macromolecules on Solid Supports," J. Am. Chem. Soc. 117(49):12050-12057, American Chemical Society, Washington, D.C. (1995)

Opposition By Affymetrix, Inc. Against European Patent No. 0 373 203 of Isis Innovation Limited, Notice and Statement, 67 pages, in the opposition to EP 0619321 (submitted October 6, 1999)

EP 0 373 203 B1 (Cited previously)

Declaration of Dr. Thomas Gingeras, Ph.D., in the opposition to EP 0619321, 10 pages (dated January 14, 1999)

Declaration of Professor Calvin F. Quate, Ph.D., in the opposition to EP 0619321, 14 pages (dated January 9, 1999)

Declaration of Glenn H. McGall, Ph.D. for Affymetrix in the opposition to EP 0619321, 10 pages (dated January 13, 1999)

Response of Affymetrix, Inc. to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, 53 pages (filed February 3, 1997)

Declaration of Professor Lubert Stryer, M.D., in the opposition to EP 0373203, 9 pages (dated January 28, 1997)

Statutory Declaration of Dr. William Bains in the opposition to EP 0373203, 4 pages (dated January 30, 1997)

Statutory Declaration of Dr. Nicholas Vaughan Ashley in the opposition to EP 0373203, 3 pages (undated) 3658-3660

Joint Claim Construction Statement in Affymetrix, Inc. v Synteni, Inc. And Incyte Pharmaceuticals, Inc., Case No. C98-4507, 39 pages (dated August 27, 1999)

Declaration of Charles Cantor in Opposition to Plaintiff's Motion for a Preliminary Injunction, for Synteni, Inc. and Incyte Pharmaceuticals, Inc. in Case No. C98-4508 FMS (MEJ), 26 pages (dated March 19, 1999)

Patchornik et al., "Photosensitive Protecting Group" J. Am. Chem. Soc. 92(21):6333-6335, American Chemical Society, Washington, D.C. (Oct. 21, 1970)

Amit et al., "Photosensitive protecting groups of amino sugars and their use in glycoside synthesis. 2-nitrobenzyloxycarbonylamino and 6-nitroveratryloxy-carbonylamino derivatives" J. Org. Chem. 39(2):192-196, American Chemical Society, Washington, D.C. (1974)

Patentee's response to the Official Letter dated March 14, 1997 from the prosecution history of EP 0619321, 6 pages (dated February 19, 1998)

Beltz et al., "Isolation of Multigene Families and Determination of Homologies by Filter Hybridization Methods," Meth. Enzymol. 100:266-285, Academic Press, New York, New York (1983)

Ekins, R.P., "Multi-Analyte immunoassay*," J. Pharm. Biomed. Anal. 7(2):155-168, Pergamon Press, Oxford, England (1989)

Ekins et al., "High Specific Activity Chemiluminescent and Fluorescent Markers: their Potential Application to High Sensitivity and 'Multi-analyte' Immunoassays," J. Biolumin. Chemilumin. 4:59-78, Wiley & Sons, Chichester, England (1989)

Ekins et al., "Development of Microspot Multi-Analyte Ratiometric Immunoassay Using Dual Fluorescent-Labeled Antibodies," Analytica Chimica Acta 227: 73-96, Elsevier, Amsterdam, The Netherlands (1989)

EP 0 235 726 A2

EP 0 304 202 A1

EP 0 268 237 A2

Forman et al., "Thermodynamics of Duplex Formation and Mismatch Discrimination on Photolithographically Synthesized Oligonucleotide Arrays," chapter 13, pgs. 206-228 from Molecular Modeling of Nucleic Acids, ACS Symposium Series 682, Apr. 13-17, 1997, Leontis et al., eds., American Chemical Society, Washington, D.C.

Decision of 26 May 1993, in European Patent Application No. 86305459.9, 5 pages (dated May 26, 1993)

Decision of 28 February 1996, in European Patent Application No. 84200792.4, 9 pages (dated February 28, 1996)

Decision of Technical Board of Appeal, in European Patent Application No. 82100124.5, 10 pages (dated January 24 1989)

Decision of Technical Board of Appeal, in European Patent Application No. 85304490.7, 16 pages (dated October 3, 1990)

Decision of Technical Board of Appeal, in European Patent Application No. 87308436.2, 11 pages (dated March 18, 1993)

Decision of Technical Board of Appeal, in European Patent Application No. 85301297.9, 14 pages (dated March 9, 1994)

- Geysen et al., "Strategies for epitope analysis using peptide synthesis," J. Immunol. Method. 102:259-274, North-Holland Pub. Co., Amsterdam, The Netherlands (1987)
- Kimura et al., "An Immobilized Enzyme Membrane Fabrication Method using an Ink Jet Nozzle," Biosensors 4:41-52, Elsevier Applied Science Publishers, Barking, Essex (1988)
- Polsky-Cynkin et al., "Use of DNA Immobilized on Plastic and Agarose Supports to Detect DNA by Sandwich Hybridization," Clin. Chem. 31(9):1438-1443, American Association For Clinical Chemistry, Washington, D.C. (1985)
- US 4,562,157
- Statutory Declaration of Dr. Edwin Southern, in the opposition to EP 0619321, with exhibits, 18 pages (dated October 6, 1999)
- Declaration of Dr. Paul Silverman, in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C98-4507 WHA, 3 pages (dated November 23, 1999)
- Hodgson and Fisk, "Hybridization probe size control: optimized 'oligolabeling'" Nucl. Acids Res. 15(15):6295, IRL Press, Ltd., London, England (1987)
- Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)
- Declaration of Professor John Sutherland, in the opposition to EP 0619321, 15 pages (dated October 13, 2000)
- Schulhof et al., "the final deprotection step in oligonucleotide synthesis is reduced to a mild and rapid ammonia treatment by using labile base-protecting groups," Nucl. Acids Res. 15(2):397-416 (1987)
- Hayakawa et al., "Allylic protecting groups in solid-phase DNA synthesis," Nucl. Acids Res. 20:75-76 (1988)
- Hayakawa et al., "The Allylic Protection Method in Solid Phase Oligonucleotide Synthesis. An Efficient Preparation of Solid-Anchored DNA Oligomers," J. Am. Chem Soc. 112:1691-1696 (1990)
- Köster et al., "N-acyl protecting groups for deoxynucleosides. A quantitative and comparative study," Tetrahedron 37:363-369 (1981)
- Sproat et al., "A new linkage for solid phase synthesis of oligodeoxyribonucleotides," Nucl. Acids Res. 13(8):2979-2987 (1988)

- Pochet et al., "Synthesis of DNA fragments linked to a solid support," Tetrahedron 43(15):3481-3490 (1987)
- Katzhendler et al., "The effect of spacer, linkage and solid support on the synthesis of oligonucleotides," Tetrahedron 45(9):2777-2792 (1989)
- Declaration of Stephen P.A. Fodor, in the opposition to EP 0619321, 5 pages (dated October 12, 2000)
- Declaration of William Bains in the opposition to EP 0619321, includes exhibits, 13 pages (dated October 13, 2000)
- Declaration of J. Leighton Read, M.D., in the opposition to EP 0619321, 4 pages (dated October 30, 2000)
- Declaration of Dr. James G. Wetmur, in the opposition to EP 0619321, 9 pages (dated March 5, 2002)
- Declaration of Professor Lubert Stryer, M.D., in the opposition to EP 0619321, 15 pages (dated March 6, 2002)
- Ekins et al., "Multianalyte microspot immunoassay. The microanalytical 'compact disk' of the future," Ann. Biol. Clin. 50:337-353 (1992)
- Ekins et al., "Developing multianalyte assays," TIBTECH 12:89-94 (1994)
- Ekins et al., "Microspot®, Array-based, Multianalyte Binding Assays: The Ultimate Microanalytical Technology?" in Microspot Immunoassays and DNA Analysis Techniques: Implications and Practical Aspect, Chapter 24, pages 640-646 (1992)
- Declaration of Stephen Philip Alan Fodor, in the opposition to EP 0619321, 7 pages (dated July 28, 2003)
- Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 15 pages (dated July 17, 2003)
- Annex AEGC-1 to the Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 11 pages (July 17, 2003)
- Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 8 pages (dated July 17, 2003)
- Annex AEGC-1 to Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 26 pages (July 17, 2003)
- Annex AEGC-2 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 7 pages (July 17, 2003)

Annex AEGC-3 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 3 pages (July 17, 2003)

Annex AEGC-4 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 6 pages (July 17, 2003)

Anonymous "Dovebid Webcast Auction," Printout of an advertisement for sale by auction on behalf of Protogene, 5 pages (publication date unknown)

Southern et al. "Parallel synthesis and analysis of large numbers of related chemical compounds: applications to oligonucleotides," Journal of Biotechnology 35:217-227 (1994)

Southern et al., "Arrays of complementary oligonucleotides for analysing the hybridisation behaviour of nucleic acids," Nucl. Acids Res. 22:1368-1373 (1994)

Southern et al., "DNA chips: analyzing sequence by hybridization to oligonucleotides on a large scale," TIG 12(3): 110-115 (1996)

Statement of Dr. Paul H. Silverman in the opposition to EP 0619321, 7 pages (dated July 25, 2003)

Coassin, Meeting with Affymax Researcher at Human Genome III Poster Presentation, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)

Silverman, Affymax and Human Genome III, Oct. 21-23, San Diego, 2 pages, in the opposition to EP 0619321 (submitted July 29, 2003)

Declaration of Dennis W. Solas, in U.S. Patent and Trademark Office Interference Proceeding No. 104,359, 9 pages (dated May 28, 1999)

US 5,424,186

OGT v. Affymetrix, Affymetrix' Opening Submissions, HC 1999 02517, HC 1999 04645 (March 22, 2001) 81 pages (submitted July 29, 2003)

Chronology of the Patentee's Efforts to Develop Polynucleotide Arrays, in the opposition to EP 0619321, 5 pages (submitted July 29, 2003)

Prosecution history of US application 07/362,901, 55 pages, in the opposition to EP 0619321 (submitted July 29, 2003)

US 5,143,854

Barinaga, M., "Will 'DNA Chip' Speed Genome Initiative?" Science 253:1489, American Association for the Advancement of Science, Washington D.C. (Sep. 27, 1991)

In the matter of Oxford Gene Technologies v. Affymetrix, Inc., Court transcript of November 8, 2000, 21 pages, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)

Chronology of the Patentee's Efforts to Reduce Region Size, in the opposition to EP 0619321, 6 pages (submitted July 29, 2003)

Sheldon et al., "Matrix DNA Hybridization," Clin. Chem. 39(4):718-719, American Association For Clinical Chemistry, Washington, D.C. (1993)

Fodor et al., "DNA Sequencing by Hybridization," Address by Stephen Fodor before The Robert A. Welch Foundation, 37th Annual Conference on Chemical Research 40 Years of the DNA Double Helix, Houston, Texas, October 25 & 26, 1993, pp. 3-9 (1993).

Jacobs et al., "Combinatorial chemistry – applications of light-directed chemical synthesis," TIBTECH 12:19-26 (1994)

Gallop et al., "Applications of Combinatorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," J. Med. Chem. 37:1233-1251 (1994)

Lipshutz et al., "Advanced DNA sequencing technologies," Current Opinion in Structural Biology 4:376-380 (1994)

Wrotnowski, "Biochip Technology Offers Powerful Tool for Research and Diagnostics," 1page, Genetic Engineering News (1994)

Lipshutz et al., "Using Oligonucleotide Probe Arrays To Access Genetic Diversity," BioTechniques. 19(3):442-447, Eaton Publishing Co., Natick, Massachusetts (1995)

US 5,959,098

McGall et al., "Light-directed synthesis of high-density oligonucleotide arrays using semiconductor photoresists," Proc. Natl. Acad. Sci. USA 93:13555-13560 (1996)

McGall et al. "The Efficiency of Light-Directed Synthesis of DNA Arrays on Glass Substrates," J. Am. Chem. Soc. 119(22):5081-5090, American Chemical Society, Washington, D.C. (1997).

Beecher et al., "Chemically Amplified Photolithography for the Fabrication of High Density Oligonucleotide Arrays," Polym. Mater. Sci, Eng. 76: 597-598 (1997)

Anderson et al., "Polynucleotide Arrays for Genetic Sequence Analysis," Topics in Current Chemistry 194:117-129 (1997)

Lipshutz et al., "High density synthetic oligonucleotide arrays," Nature Genet., suppl. 21:20-24 (1999)

Barone et al., "Photolithographic Synthesis of High Density Oligonucleotide Probe Arrays," *Nucleosides, Nucleotides & Nucleic Acids* 20(4-7):525-531 (2001)

US 5,658,734

US 6,083,697

Amendment filed with the United States Patent Office during prosecution of application no. 08/466,632, dated September 23, 1996, 8 pages (submitted July 29, 2003)

Declaration of Dr. Marc M. Greenberg, in the opposition to EP 0619321, 11 pages (dated July 28, 2003)

Curriculum vitae of Marc M. Greenberg, 25 pages (publication date unknown)

Venkatesan et al., "Improved Utility of Photolabile Solid Phase Synthesis Supports for the Synthesis of Oligonucleotides Containing 3'-Hydroxyl termini," *J. Org. Chem.* 61:525-529 (1996)

Pirrung et al., "3'-Nitrophenylpropyloxycarbonyl (NPPOC) Protecting Groups for High-Fidelity Automated 5'→3' Photochemical DNA Synthesis," *Organic Letters* 3(8): 1105-1108 (2001)

Beier et al., "Synthesis of Photolabile 5'-O-Phosphoramidites for the Photolithographic Production of Microarrays of inversely Oriented Oligonucleotides," *Helvetica Chimica Acta* 84:2089-2095 (2001)

Wolter et al., "Polymer support oligonucleotide synthesis XX1): Synthesis of a Henhectacosa Deoxynucleotide by use of a dimeric phosphoramidite synthon," *Nucleosides & Nucleotides* 5(10):65-77 (1986)

Sondek et al., "A General Strategy for Random Insertion and Substitution Mutagenesis: Substoichiometric Coupling of Trinucleotide Phosphoramidites," *Proc. Natl. Acad. Sci. USA* 89(8):3581-3585 (2003)

Virnekas et al., "Trinucleotide phosphoramidites: ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis," *Nucl. Acids Res.* 22:5600-5607 (1994)

Zehavi et al., "Light-Sensitive Glycosides. 1. 6-Nitroveratryl β-D-Glucopyranoside and 2-Nitrobenzyl β-D-Glucopyranoside," *J. Org. Chem.* 37(14):2281-2285, American Chemical Society, Washington, D.C. (1972).

Zehavi et al., "Light-Sensitive Glycosides. II. 2-Nitrobenzyl 6-Deoxy-α-L-mannopyranoside and 2-Nitrobenzyl 6-Deoxy-β-L-galactopyranoside," *J. Org. Chem.* 37(4):2285-2288 (1972)

- Usman et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an Escherichia coli Formylmethionine tRNA," J. Am. Chem. Soc. 109:7845-7854 (1987)
- Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," Nucl. Acids Res. 23(14):2677-2684 (1995)
- Scaringe et al., "Novel RNA Synthesis Method Using 5'-O-Silyl-2'-O-orthoester Protecting Groups," J. Am. Chem. Soc. 120:11820-11821 (1998)
- Stipp, "Gene Chip Breakthrough; Microprocessors have reshaped our economy, spawned vast fortunes, and changed the way we live. Gene chips could be even bigger," Fortune, p. 56 -6 page transcript (March 31, 1997)
- Online European Patent Register – Results, EP 0373203 record printout from July 28, 2003, in the opposition to EP 0619321, 3 pages (submitted July 29, 2003)
- Declaration of Edwin Mellor Southern, in the opposition to EP 0373203, with exhibits, 22 pages (January 16, 1998)
- First Confidential Witness Statement of Alan-Philippe Blanchard, in the opposition to EP 0619321, 4 pages (dated January 19, 2001)
- Expert Report of David Bowen Wallace, P.E., Ph.D., in the opposition to EP 0619321, 59 pages (dated January 18, 2001)
- Response of Affymetrix Inc. (Opponent VII) to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, in the opposition to EP 0619321, 50 pages (submitted July 29, 2003)
- Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metragen, Inc., 24 pages, in the opposition to EP 0619321 (submitted July 29, 2003)
- Curriculum Vitae of Professor Roger Ekins, FRS., in the opposition to EP 0619321, 2 pages (submitted July 31, 2003)
- Stoll et al. "Protein Microarray Technology," Frontiers in Bioscience 7:c13-32 (2002)
- "universal succession," and "universal successor," pp. 1445-1446, Black's Law Dictionary, 7th edition, Garner, Ed., West Group St. Paul, Minnesota, USA (1999), in the opposition to EP 0619321, 3 pages (submitted April 2, 2004)

Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metrigen, Inc., 40 pages, in the opposition to EP 0619321 (submitted April 2, 2004)

Declaration of Robert J. Molinari, in the opposition to EP 0619321, 8 pages (dated June 16, 2004)

Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metrigen, Inc., 67 pages, in the opposition to EP 0619321 (submitted January 10, 2005)

Declaration of Thomas Brennan, in the opposition to EP 0619321, 7 pages (dated January 7, 2005)

Declaration of Albert. P. Halluin, in the opposition to EP 0619321, 2 pages (dated January 7, 2005)

Declaration of Nathan Hamilton, in the opposition to EP 0619321, 3 pages (dated January 5, 2005)

Declaration of Don F. Livornese, in the opposition to EP 0619321, 2 pages (dated January 7, 2005)

Declaration of Mark A. Metcalf, in the opposition to EP 0619321, 1 page (dated January 4, 2005)

Declaration of Thomas Brennan, in the opposition to EP 0619321, 7 pages (dated January 5, 2005)

Broughton, Letter enclosing copy of a Decision of the Opposition Division in relation to European Patent No. 834 575, 34 pages, in the opposition to EP 0619321 (submitted September 6, 2005)

McClure, "The Hidden Value of Intangibles," <<http://www.investopedia.com/printable.asp?a=/articles/03/010603.asp>>, 2 pages (January 6, 2003)

Van Vleet, "Intangible Asset Valuation Issues Under SFAS 142," 8 pages, from <<http://www.williametteinsights.com/02/intangibleasset.html>> (January 19, 2006).

Declaration of Jeffrey B. Oster, in the opposition to EP 0619321, 3 pages (dated January 19, 2006)

Slides which show in diagrammatic and outline form the chemistry and process of array preparation in accordance with the invention, in the opposition to EP 0619321, 6 pages (submitted January 23, 2006)

US 4,086,254

Cama et al., "Total Synthesis of Thienamycin Analogues. 1. Synthesis of the Thienamycin Nucleus and dl-Descysteaminythienamycin," J. Am. Chem. Soc. 100(25):8006-8007 (1978)

Second Declaration of Professor John Sutherland, in the opposition to EP 0619321, 1 page (dated January 19, 2006)

Second declaration of Robert J. Molinari, in the opposition to EP 0619321, 1 page (dated January 19, 2006)

Penner, "Affymetrix – universal Successor / Successor Liability Issues," 5 pages, Memo from Baker & McKenzie LLP, in the opposition to EP 0619321 (submitted January 23, 2006)

Entity Details, Protogene Laboratories, Inc., 2 pages, <<<https://sos-res.state.de.us/tin/controller>>>, (printed March 10, 2006)

Declaration by Julian Gordon, with curriculum vitae, in the opposition to EP 0834575, 13 pages (dated May 24, 2005)

Lee, "Re: Protogene Laboratories, Inc.," Letter from Greenberg Taurig, 2 pages, dated March 22, 2006, in the opposition to EP 0619321 (submitted May 4, 2006)

Statement of Thomas Brennan, Ph.D., in the opposition to EP 0619321, 1 page (dated March 22, 2006)

Molanari, letter to Vossius and Partners, 1 page, dated March 22, 2006, in the opposition to EP 0619321 (submitted May 4, 2006)

Certificate of Dissolution of Protogene Laboratories, Inc., 1 page (dated August 18, 2003)

Herring, Letter to Axel Stellbrink, in the opposition to EP 0619321, 4 pages (dated September 13, 2006)

Fann, Minutes of a Special Meeting of The Board of Directors of Protogene Laboratories, Inc., in the opposition to EP 0619321, 1 page (dated August 25, 2006)

Authorization, form 1003 02.00, in the opposition to EP 0619321, 1 page (dated September 12, 2006)

Brennan, Letter to A. Stellbrink, in the opposition to EP 0619321, 1 page (dated September 10, 2006)

Statutory Declaration of Dr. Nicholas Vaughan Ashley in the opposition to EP 0373203, 8 pages (dated May 26, 1995)

Statutory Declaration of Dr. William Bains in the opposition to EP 0373203, includes exhibits, 19 pages (dated May 24, 1995)

Bains and Smith, "A novel method for nucleic acid sequence determination," J. Theor. Biol. 135: 303-307, Academic Press, London, England (1988)

Blawas, A.S., "Photopatterning of Protein Features using Caged-biotin-Bovine Serum Albumin," dissertation for Ph.D at Duke University in 1998

Britten-Kelly and Willis, "Michael Additions to Alkyl Substituted Divinyl Ketones," Synthesis 1980:27 (1980)

Grounds of Opposition to EP 0619 321 B1, 15 pages, in the opposition to EP 0619321, 3 pages (submitted November 26, 1999)

Lockhart et al., "Expression monitoring by hybridization to high-density oligonucleotide arrays," Nature BioTechnology 14:1575-1580 (1996)

Biochemistry Poster Session, 50 pages (October 4-7, 1994)

7. EP 0728520

Opponent(s): PamGene B.V.

Status: Opposition was filed on February 18, 2002. A copy of the Opposition is included as Form 1449 document 400. The Patentee's response to the opposition was filed on Sept. 30, 2002, a copy of which is also included as Form 1449 document 401. The parties were summoned to oral hearing to discuss the issues. The opponent then submitted further comments as to lack of novelty, inventive step and sufficiency, along with curriculum vitae for experts expected to attend the oral hearing. The additional comments are included as Form 1449 document 402. The oral proceeding concluded in the patent being revoked, as set forth in the Grounds for the Decision dated January 29, 2004, which is included as Form 1449 document 403. A Notice of Appeal was filed on April 1, 2004. The Patentee's grounds for appeal and the opponent's response are included as Form 1449 documents 404 and 405. The parties have been summoned to oral proceedings for the appeal, which are scheduled to take place on June 12, 2007.

Claims: The granted claims are generally directed to methods of deprotecting selected regions of a substrate comprising applying a deprotection agent in vapor phase to selected regions of a layer of linker molecules. The granted claims are attached as Exhibit 7.

Issues: Allegations of lack of novelty and inventive step, allegations that the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, and that the subject matter of the patent extends beyond the content of the application as filed.

References cited:

WO 93/09668

EP 0 619 321 A1

US 5,318,679

Bray et al., "Simultaneous Multiple Synthesis of Peptide Amides by the Multipin Method. Applications of Vapor-Phase Ammonolysis," J. Org. Chem. 59:2197-2203 (1994)

Abbott et al., "Manipulation of the Wettability of Surfaces on the 0.1- to 1-Micrometer Scale Through Micromachining and Molecular Self-Assembly," Science 257:1380-1382, American Association for the Advancement of Science, Washington D.C. (1992)

Bray et al., "Gas phase cleavage of peptides from a solid support with ammonia vapour. Application in simultaneous multiple peptide synthesis," Tetrahedron Letts. 32(43): 6163-6166, abstract only (1991)

Hulmes and Pan, "Selective cleavage of polypeptides with trifluoroacetic acid: applications for microsequencing," Anal. Biochem. 197(2):368-376, abstract only (1991)

Miyatake et al., "Specific chemical cleavage of asparaginyl and glycyl-glycine bonds in peptides and proteins by anhydrous hydrazine vapor," J. Biochem. 115(2):208-212, abstract only (1994)

Zingde et al., "Peptide mapping of proteins in gel bands after partial cleavage with acidic cyanogens bromide vapors," Anal. Biochem. 155(1):10-13, abstract only (1986)

Matsueda, "Deprotection of Nin-formyl tryptophan using 1,2-ethanedithiol in liquid hydrogen fluoride," Int. J. Peptide Protein Res. 20:26-34 (1982)

EP 0 373 203 B1

Claim requests for opposition proceedings for EP 0373203 Oxford Gene Technology, 3 pages (dated November 13, 2001)

CV of van Bueringen, in the opposition to EP 0 728 520 (submitted November 17, 2003)

CV of Ruijtenbeek, in the opposition to EP 0 728 520 (submitted November 17, 2003)

Goldberg et al., "Screen printing: a technology for the batch fabrication of integrated chemical-sensor arrays," Sensors and Actuators B 21:171-183 (1994)

US 5,449,754

WO 95/25116

8. EP 0853679

Opponent(s): Agilent, Combimatrix, Applera and Clondia

Status: Four separate oppositions were filed by the above parties. The parties were summoned to oral proceedings to discuss the issues, however, according to the Summons, the Opposition Division preliminarily agreed with the Patentee's arguments. The summons and position of the OD is included as Form 1449 document 416. At the oral proceedings, the Opposition Division found that the amended claims submitted in the first Auxiliary Request were patentable and met all the requirements of the EPC. The minutes of the oral proceeding are included as Form 1449 document 417.

Claims: The granted claims are generally directed to methods of simultaneously monitoring the expression of a multiplicity of genes comprising hybridizing a pool of RNA transcripts to an array of greater than 100 different probes immobilized on a substrate at a density of greater than 60 different probes per cm² and attached to the surface through a single covalent bond, and quantifying hybridization by comparing hybridization of a plurality of match and control probes to provide a measure of the levels of transcription. The claims as granted by the Examination Division are attached as Exhibit 8. The claims as granted by the Opposition Division are attached as Exhibit 9.

Issues: Allegations of lack of novelty and inventive step, insufficiency of disclosure; and added subject matter.

References cited:

Lipshutz et al., "Using Oligonucleotide Probe Arrays To Access Genetic Diversity," *BioTechniques*. 19(3):442-447, Eaton Publishing Co., Natick, Massachusetts (1995)

Augenlicht et al., "Expression of Cloned Sequences in Biopsies of Human Colonic Tissue and in Colonic Carcinoma Cells Induced to Differentiate in Vitro," *Cancer Res.* 47:6017-6021 (1987)

US 4,981,783

WO 89/10977

WO 92/10588

WO 95/11995

WO 97/10365

WO 95/00530

WO 95/20681 A1

WO 89/11548

WO 95/35505

WO 90/15070

EP 0 171 150 A2

Dattagupta et al., "Rapid Identification of Microorganisms by Nucleic Acid Hybridization after Labeling the Test Sample, Analytical Biochemistry," Anal. Biochem. 177: 85-89 (1989)

Khrapko et al., "An oligonucleotide hybridization approach to DNA sequencing" FEBS Lett. 256(1):118-122, North-Holland on behalf of the Federation of European Biochemical Societies, Amsterdam, The Netherlands (Oct. 1989)

Dramanac et al., "Sequencing by oligonucleotide hybridization: a promising framework in decoding of the genome program?," Proceedings of the first international conference on electrophoresis, supercomputer and the human genome, Tallahassee, Florida, 10-13 April 1990, Editors Center and Lim, World Scientific pages 47-59, April 1990

McGarrigle/Saliba/Jiminez regarding the public availability of D3 (Lipshutz et al), e-mail correspondence of February 5-6, 2002, 2 pages

Date Stamp relating to D3 (Lipshutz et al) from the University of California at Berkeley (cited by patentee)

Shultz/Bickel e-mail regarding release date of Biotechniques Vol. 19(3) correspondence of February 2-3, 2005, 2 pages

Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)

Kerkof and Kelly, "A Procedure for Making Simultaneous Determinations of the Relative Levels of Gene transcripts in Tissues or Cells," Anal. Biochem. 188: 349-355, Academic Press, New York, New York (1990)

Ogretman et al., "Internal cRNA Standards for Quantitative Northern Analysis," BioTechniques 14(6):935-940 (1993)

Kawasaki et al., "Genetic Analysis Using Polymerase Chain Reaction-Amplified DNA and Immobilized Oligonucleotide Probes: Reverse Dot-Blot Typing," Methods in Enzymology 218:369-381 (1993)

Declaration of Dianne Olson, 1 page (dated June 15, 2006)

Date Stamp relating to D3 (Lipshutz et al) from the Loyola University Health Sciences Library

Date Stamp relating to D3 (Lipshutz et al) from the University of Michigan Medical Library

Quigley, Fax communication regarding journal issue dates, 1 page, Steenbock Memorial Library, University of Wisconsin-Madison (May 11, 2006)

Curriculum Vitae of Thomas Brendan Ryder, 7 pages (publication date unknown)

Curriculum Vitae of Philip L. McGarrigle Jr., 2 pages (publication date unknown)

Curriculum Vitae of Professor Anthony Edward George Cass, 11 pages (publication date unknown)

9. EP 0834576

Opponent(s): Dr. Peter Schneider, Abbot, PamGene, Applera, Roche Diagnostics and Combimatrix

Status: Six separate oppositions were filed by the above parties. Copies of these oppositions are included as Form 1449 documents 432-437. The Opposition of Roche Diagnostics was subsequently withdrawn. The patentee filed a response to the oppositions on February 23, 2004, which is included as Form 1449 document 438. The parties were summoned to oral proceedings, however, the Opposition Division published a preliminary non-binding opinion that the patent satisfied all the criteria of the EPC, which is included as Form 1449 document 439. Abbott submitted further observations discussing additional prior art documents. The further Abbott submission is included as Form 1449 document 440. The additional prior art documents are included in the list below. Applera submitted further observations as well as expert declarations by Southern and Wallace attesting to the state of the art of high density arrays. The further Applera submission is included as Form 1449 document 441. The expert declarations are included in the reference list below. In preparation for oral proceedings the patentee submitted declarations by Cass and Sunderland. The patentee's further observations are included as Form 1449 document 442. The expert declarations are included in the reference list below. The patentee also submitted a copy of the Opposition Division's decision in respect of EP 0834575, which was granted on

the basis of an application derived from the same patent application. This opposition is discussed elsewhere in this IDS. Following oral proceedings, the patent was revoked. The minutes of the oral proceeding are included as Form 1449 document 443. The patentee filed a Notice of Appeal on July 27, 2005. The arguments made on appeal are included as Form 1449 document 444. Applera subsequently withdrew their opposition to the patent. Abbott, Combimatrix and Dr. Schneider each filed a response to the patentee's appeal. These submissions are included as Form 1449 documents 445-447. Abbott subsequently withdrew its opposition on April 27, 2006. The appeal is currently pending.

Claims: The granted claims are generally directed to methods for detecting nucleic acid sequences in two or more collections of nucleic acids comprising contacting an array of more than 100 different probes with first and second distinguishably labeled collections of nucleic acids and detecting hybridization of the labeled complementary nucleic acids. The claims as granted by the Examination Division are attached as Exhibit 10.

Issues: Allegations of lack of inventive step; insufficient disclosure; priority of the granted patent is not valid.

References cited:

WO 89/10977 A1

Khrapko et al., "An oligonucleotide hybridization approach to DNA sequencing" FEBS Lett. 256(1):118-122, North-Holland on behalf of the Federation of European Biochemical Societies, Amsterdam, The Netherlands (Oct. 1989)

EP 0 392 546 A2

EP 0 347 210 A2

DE 37 22 958 A1

Drmanac, R., et al., "Partial Sequencing by Oligo-hybridization: Concept and Applications in Genome Analysis" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 60-74 (Apr. 10-13, 1990)

WO 90/05789

Renz et al., "A colorimetric method for DNA hybridization," Nucl. Acids Res. 12(8):3435-3445, IRL Press Ltd., London, England (1984)

US 4,855,225

Smith et al., "The synthesis of oligonucleotides containing an aliphatic amino group at the 5' terminus: synthesis of fluorescent DNA

primers for use in DNA sequence analysis," Nucleic Acids Research 13(7):2399-2412 (1985)

Carrano et al., "A High-Resolution. Fluorescence-Based. Semiautomated Method for DNA Fingerprinting," Genomics 4:129-136, Academic Press, San Diego, California (1989)

WO 90/05910 A1

WO 92/10588 A1

EP 0 834 576 A2

Dattagupta et al., "Rapid identification of Microorganisms by Nucleic Acid Hybridization after Labeling the Test Sample," Anal. Biochem. 177:85-89, Academic Press, New York, New York (1989)

EP 0 235 726 A2

US 4,965,188

EP 0 304 202 A1

Skolnick et al., "Simultaneous Analysis of Multiple Polymorphic Loci Using Amplified Sequence Polymorphisms (ASPs)," Genomics 2: 273-279

Renz, "Polynucleotide-histone H1 complexes as probes for blot hybridization," EMBO 2(6):817-822 (1983)

Craig et al., "Ordering of cosmid clones covering the herpes simplex virus type I (HSV-I) genome: A test case for fingerprinting by hybridisation," Nucl. Acids Res. 18:2653-2660, IRL Press, Ltd., London, England (1990)

WO 89/11548 A1

EP 0 237 362 A1

Drmanac, R., et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program?" The First Intl. Conf. Electrophoresis, Supercomputing, and the Human Genome, Eds. Cantor and Lim, World Scientific, pp. 47-59 (Apr. 10-13, 1990)

WO 90/15070

US 07/362,901

US 07/492,462

US 07/624,114

Order Granting Incyte's Motion for Partial Summary Judgment of invalidity of Claims 4 and 5 of the '992 Patent for lack of Written

Description of "Mixture," Denying Affymetrix' Cross-motion with Respect Thereto, and Denying Incyte's Motion for Partial Summary Judgment of invalidity of Claims 4 and 5 of the '992 Patent for indefiniteness, from Affymetrix, Inc. vs. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C-99-21164 JF, 12 pages (filed October 3, 2001)

Order Granting Motion for Partial Summary Judgment of invalidity of Claims 1-3 of U.S. Patent No. 5,800,992 for Indefiniteness of "Substantially Complementary," from Affymetrix, Inc. vs. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case Nos. C-99-21164 JF and C-99-21165 JF, 6 pages (filed September 20, 2001)

US 5,800,992

Payne, Fax communication to H. Kendall regarding available date of Electrophoresis Supercomputing and the Human Genome: 1st International Conference, 1990, 1 page (dated January 28, 2004)

Declaration of Professor John Sutherland, in the matter of EP 0 834 575, 13 pages (dated November 17, 2004)

Declaration of Professor Anthony Edward George Cass, in the matter of EP application no. 99202455.4, 25 pages (undated)

"array," in The Concise Oxford Dictionary of Current English, Allen et al., Eds., Clarendon Press, Oxford, page 59 (1990)

Nederlof et al., "Three-Color Fluorescence In Situ Hybridization for the Simultaneous Detection of Multiple Nucleic Acid Sequences," Cytometry 10:20-27, Wiley-Liss, New York, New York (1989)

Chehab et al. "Detection of specific DNA sequences by fluorescence amplification: A color complementation assay," Proc. Natl. Acad. Sci. USA 86:9178-9182, National Academy of Sciences, Washington D.C. (1989)

Erlich and Bugawan, "Chapter 16. HLA Class II Gene Polymorphism: DNA Typing, Evolution, and relationship to Disease Susceptibility," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 193-204 (1989)

Kazazlan, "Chapter 14. Use of PCR in the Diagnosis of Monogenic Disease," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 153-169 (1989)

Declaration of Edwin Mellor Southern, in the opposition to EP 0619321, with exhibits, 22 pages (January 16, 1998)

Expert Report of David Bowen Wallace, P.E., Ph.D., in the opposition to
EP 0619321, 59 pages (dated January 18, 2001)

Interlocutory decision in Opposition proceedings, from the Opposition to
EP 0834575, 39 pages (dated January 24, 2005)

[x] United States Patent and Trademark Office Interference Proceedings

Affymetrix has been a party in the following United States Patent and Trademark
Office Interference Proceedings:

1. Interference 104,358

Opponents: Incyte Pharmaceuticals, Inc. and The Board of Trustees of the Leland
Stanford Junior University

Status: Judgment was awarded against Affymetrix rendering U.S. Patent
5,800,992 invalid in view of the Order and Final Judgment of the United States
District Court for the Northern District of California in the case of Incyte
Pharmaceuticals, Inc. et al. v. Affymetrix, Inc., Case No: C99-21111 JF. A copy
of the Judgment Pursuant to Remand from United States District Court is included
as Form 1449 document 460.

Claims: The claims of the '992 patent are generally directed to a method of
detecting the relative amounts of specific targets in two differing mixtures of
nucleic acids through the use of reporter labels and hybridization within arrays.
The claims are attached as Exhibit 21.

Issues: Allegations of the lack of written description support, lack of enablement,
claim indefiniteness.

References cited:

Declaration of Ward in US 08/514,875, dated October 26, 1998

Declaration of Kricka in US 08/514,875, dated October 26, 1998

US patent application no. 07/624,114, filed December 6, 1990

US Patent No. 5,800,992

US Patent No. 5,143,854

US Patent No. 5,252,743

US Patent No. 5,744,305

WO 95/35505 A1

- Sambrook et al., "Analysis of RNA," in Molecular Cloning, A Laboratory Manual, Second Edition, Sambrook et al., Eds., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, USA, pp. 7.37-7.39 and 7.84 (1989)
- Alwine et al., "Method for detection of specific RNAs in agarose gels by transfer to diazobenzylmethyl-paper and hybridization with DNA probes," Proc. Natl. Acad. Sci. USA 74:5350-5354 (1977)
- Alwine et al., "Detection of Specific RNAs or Specific Fragments of DNA by Fractionation in Gels and Transfer to Diazobenzylmethyl Paper," Meth. Enzymol. 68: 220-242 (1979)
- Caruthers, M.H., "Gene Synthesis Machines: DNA Chemistry and Its Uses," Science 230:281-285, American Association for the Advancement of Science, Washington D.C. (1985)
- Declaration of Dennis W. Solas in Patent Interference 104,358 dated May 28, 1999
- Pirrung et al., "Comparison of Methods for Photochemical Phosphoramidite-Based DNA Synthesis," J. Org. Chem. 60:6270-6276, American Chemical Society, Washington, D.C. (1995)
- Pirrung et al., "Proofing of Photolithographic DNA Synthesis with 3'.5'-Dimethoxybenzoyloxycarbonyl-Protected Deoxynucleoside Phosphoramidites," J. Org. Chem. 63(2):241-246, American Chemical Society, Washington, D.C. (1998)
- Gait, "Chapter 1. An Introduction to Modern Methods of DNA Synthesis," pp. 1-22 in Oligonucleotide Synthesis: A Practical Approach, IRL Press Oxford (1984)
- Jones, "Chapter 2. Preparation of Protected Deoxyribonucleosides," pp. 23-34 in Oligonucleotide Synthesis: A Practical Approach, IRL Press Oxford (1984)
- Atkinson and Smith, "Chapter 3. Solid-phase Synthesis of Oligodeoxyribonucleotides by the Phosphitriester Method," pp. 35-81 in Oligonucleotide Synthesis: A Practical Approach, IRL Press Oxford (1984)
- Sproat and Gait, "Chapter 4. Solid-phase Synthesis of Oligodeoxyribonucleotides by the Phosphotriester Method," pp. 83-115 in Oligonucleotide Synthesis: A Practical Approach, IRL Press Oxford (1984)
- Schulhof et al., "The final deprotection step in oligonucleotide synthesis is reduced to a mild and rapid ammonia treatment by using labile base-protecting groups," Nucl. Acids Res. 15:397-416 (1987)
- US Patent No. 4,542,102

US Patent No. 4,711,955

US Patent No. 4,713,326

“Complain for patent infringement,” in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Civil Action No. 98-520, dated September 1, 1998

“Brief in Support of Plaintiff Affymetrix’ Motion for Preliminary Injunction,” in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Civil Action No. 98-520, dated April 15, 1999

Deposition of Sir Walter Bodmer in Patent Interference 104,358 dated July 30, 1999

Deposition of Larry Kricka in Patent Interference No. 104,358, dated May 20, 1999

Deposition of William C. Lacourse in Patent Interference No. 104,359, dated June 18, 1999

Deposition of Gail Stygall, Ph.D. in Patent Interference No. 104,359, dated June 17, 1999

Deposition of Dennis W. Solas, Ph.D.. in Patent Interference No. 104,359, dated June 16, 1999

Deposition of Martin J. Goldberg, Ph.D.. in Patent Interference No. 104,359, dated June 16, 1999

Declaration of Teresa M. Corbin in Patent Interference 104,358 dated June 15, 1999

“Oligonucleotide” pp. 349-350 in McGraw-Hill Encyclopedia of Science & Technology, 6th Edition, McGraw-Hill Book Company, New York, New York (1987)

Declaration of Professor Lubert Stryer, M.D. in European Patent No. 0 373 203 of Isis Limited and Opposition thereto by Affymetrix dated January 28, 1997

Parmalee and Kelber, “Memo to Judge Torczon re Conference Calls in Interference Nos. 104,358 and 104,359, dated June 16, 1999

2. Interference 104,359

Opponents: Incyte Pharmaceuticals, Inc. and The Board of Trustees of the Leland Stanford Junior University

Status: Involved U.S. Patent 5,744,305. A settlement agreement was reached, and the interference was terminated. Judgment was that no interference exists. A copy

of the Brown Submission under 37 C.F.R. § 1.666(b) and the Judgement Pursuant to Remand from United States District Court are included as Form 1449 documents 480-481.

Claims: The claims of the issued patent are generally directed to oligonucleotide arrays. The claims US 08/688,488 and the '305 patent are attached as Exhibits 11 and 12 respectively.

Issues: Allegations of improper conversion to a CIP application, lack of written description support, lack of enablement, claim indefiniteness.

References cited:

- Pirrung et al., "Comparison of Methods for Photochemical Phosphoramidite-Based DNA Synthesis," J. Org. Chem. 60:6270-6276, American Chemical Society, Washington, D.C. (1995)
- Pirrung et al., "Proofing of Photolithographic DNA Synthesis with 3'.5'-Dimethoxybenzoinyloxycarbonyl-Protected Deoxynucleoside Phosphoramidites," J. Org. Chem. 63(2):241-246, American Chemical Society, Washington, D.C. (1998)
- Pease et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis," Proc. Natl. Acad. Sci. USA 91:5022-5026, National Academy of Sciences, Washington D.C. (1994)
- Sambrook et al., "Analysis of RNA," in Molecular Cloning, A Laboratory Manual, Second Edition, Sambrook et al., Eds., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, USA, pp. 7.37-7.39 (1989)
- Alwine et al., "Method for detection of specific RNAs in agarose gels by transfer to diazobenzylmethyl-paper and hybridization with DNA probes," Proc. Natl. Acad. Sci. USA 74:5350-5354 (1977)
- Alwine et al., "Detection of Specific RNAs or Specific Fragments of DNA by Fractionation in Gels and Transfer to Diazobenzylmethyl Paper," Meth. Enzymol. 68: 220-242 (1979)
- Caruthers, M.H., "Gene Synthesis Machines: DNA Chemistry and Its Uses," Science 230:281-285, American Association for the Advancement of Science, Washington D.C. (1985)
- Schulhof et al., "The final deprotection step in oligonucleotide synthesis is reduced to a mild and rapid ammonia treatment by using labile base-protecting groups," Nucl. Acids Res. 15:397-416 (1987)

US 07/435,316

US 5,252,743

WO 89/10977

EP 0 373 203 B1

Declaration of Charles L. Gholz, in U.S. Interference No. 104,359, 5 pages
(dated November 22, 1995)

Declaration of Kricka, in U.S. Interference No. 104,359, 2 pages (dated
December 3, 1998)

Declaration of Kelber, in U.S. Interference No. 104,359, 5 pages (dated
December 3, 1998)

Declaration of William C. LaCourse, in U.S. Interference No. 104,359, 14
pages (dated May 25, 1999)

Declaration of Dr. Gail Stygall, in U.S. Interference No. 104,359, 21 pages
(dated May 24, 1999)

Declaration of Sir Walter Bodmer, in U.S. Interference No. 104,359, 10
pages (dated May 27, 1999)

Declaration of Dennis W. Solas, in U.S. Interference No. 104,359, 9 pages
(dated May 28, 1999)

Declaration of Martin Goldberg, in U.S. Interference No. 104,359, 4 pages
(dated May 26, 1999)

Declaration of Teresa M. Corbin, in U.S. Interference No. 104,359, 3
pages (dated June 15, 1999)

Deposition of Larry Kricka, in U.S. Interference No. 104,359, 52 pages
(dated May 20, 1999)

Deposition of William C. LaCourse, Ph.D., in U.S. Interference No.
104,359, 22 pages (dated June 24, 1999)

3. Interference No. 104,552

Opponents: Radoje Drmanac, Radomir B. Crkvenjakov and Hyseq., Inc.

Status: A settlement agreement was reached, and the interference was terminated. Judgment that Drmanac is not entitled to priority nor to a patent. A copy of Drmanac list of intended motions included art that Drmanac was going to cite against Affymetrix is included as Form 1449 document 493.

Claims: The claims of the issued patents are generally directed to a computer program product that identifies an unknown base in a sample nucleic acid sequence. The claims of US 5,795,716 and 5,974,716 are attached as Exhibits 13 and 14 respectively.

Issues: Allegations that claims not patentable under 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

References cited:

WO 92/10588

Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)

Strezoska, Z., et al., "DNA sequencing by hybridization: 100 bases read by a non-gel-based methods," Proc. Natl. Acad. Sci. USA 88:10089-10093, National Academy of Sciences, Washington, D.C. (1991)

Drmanac, R., et al., "Sequencing by hybridization: towards an automated sequencing of one million M13 clones arrayed on membranes," Electrophoresis 13:566-573, Verlag Chemie, Weinheim, Germany (1992)

Drmanac, R., et al., "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing," Science 260:1649-1652, American Association for the Advancement of Science, Washington D.C. (1993)

US Patent No. 5,202,231

Khorlin, et al., "An oligonucleotide matrix hybridization approach to DNA sequencing," Nucl. Acid Res. Symp. Ser. 24:191 (1991)

Khrapko et al., "Hybridization of DNA with Oligonucleotides Immobilized in Gel: A Convenient Method for Detecting Single Base Substitutions," Molecular Biology 25:581-591 (Dec. 1991) (Russian original: volume 25(3), pp. 718-730, May-Jun. 1991)

Khrapko et al., "A method for DNA sequencing by hybridization with oligonucleotide matrix," DNA Sequence – J. DNA Sequencing and Mapping 1:375-388 (1991).

Drmanac, R., et al., Laboratory Methods--Reliable Hybridization of Oligonucleotides as Short as Six Nucleotides, DNA Cell Biol. 9:527-534, Mary Ann Liebert, New York, New York (1990)

US Patent No. 5,002,867

4. Interference 104,658

Opponents: Oxford Gene Technology, Limited

Status: A settlement agreement was reached, and the interference was terminated before filing preliminary motions. Judgment was adverse to Affymetrix; finding that it was not entitled to a patent based on claims 102, 103, and 106 of US 09/063,933. A copy of the Judgment pursuant to C.F.R. § 1.662 is included as Form 1449 document 494.

Claims: The claims of the count were generally directed to oligonucleotide arrays and methods of using said arrays to analyze polynucleotide or ligands. The claims US 6,054,270 and US 09/063,933 are attached as Exhibits 15 and 16 respectively.

Issues: None

References cited:

None; the interference was terminated before any preliminary motions were filed.

5. Interference 105,089

Opponents: Agilent Technologies, Inc.

Status: Both parties agreed to adverse judgment under 37 C.F.R. § 1.662(a). Agilent is not entitled to a patent on claims 1-18 of US 5,922,534 or claims 1-5 of US 6,255,053. Affymetrix is not entitled to a patent on claims 8-40 of US 09/614,068. A copy of the Judgment pursuant to C.F.R. § 1.662(a) is included as Form 1449 document 495.

Claims: The claims of the U.S. patents 5,922,534; 6,255,053; and U.S. application no. 09/614,068 are generally directed to oligonucleotide arrays and methods of detecting oligonucleotides and nucleic acids using arrays. The claims of US 5,922,534; 6,255,053; and US 09/614,068 are attached as Exhibits 17, 18, and 19 respectively.

Issues: Anticipation, obviousness, lack of written description support

References cited:

WO 93/22680 A1

Southern et al., "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models" Genomics 13:1008-1017, Academic Press, San Diego, California (1992)

WO 93/09668

U.S. Patent No. 5,424,186

U.S. Patent No. 5,837,832

U.S. Patent No. 3,642,450

U.S. Patent No. 5,077,210

U.S. Patent No. 5,215,882

U.S. Patent No. 5,653,939

U.S. Patent No. 5,688,642

U.S. Patent No. 5,843,767

Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis" *Science* 251:767-773, American Association for the Advancement of Science, Washington D.C. (1991)

Maskos and Southern, "Parallel analysis of oligodeoxyribonucleotide (oligonucleotide) interactions. I. Analysis of factors influencing oligonucleotide duplex formation," *Nucl. Acids Res.* 20:1675-1678 (1992)

Bhatia et al., "New Approach To Producing Patterned Biomolecular Assemblies," *J. Am. Chem. Soc.* 114:4432-4433 (1992)

Matsuzawa et al., "Containment and growth of neuroblastoma cells on chemically patterned substrates," *Journal of Neuroscience Methods* 50:253-260 (1993)

Chrisey et al., "Selective Attachment of Synthetic DNA to Self-assembled-monolayer Functionalized Surfaces," *Mat. Res. Soc. Symp. Proc.* 330:179-184 (Symposium held Nov. 29 - Dec. 3, 1993)

Southern et al., "Arrays of complementary oligonucleotides for analysing the hybridisation behaviour of nucleic acids," *Nucl. Acids Res.* 22:1368-1373 (1994)

Lamture et al., "Direct detection of nucleic acid hybridization on the surface of a charge coupled device," *Nucl. Acids Res.* 22(11):2121-2125 (1994)

Guo et al., "Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports," *Nucl. Acids Res.* 22(24):5456-5465 (1994)

Eggers et al., "A Microchip for Quantitative Detection of Molecules Utilizing Luminescent and Radioisotope Reporter Groups," *BioTechniques* 17(3):516-524 (1994)

U.S. Patent No. 6,210,894

U.S. Patent No. 6,255,053

Amendment, from File History of U.S. Patent No. 5,922,534, Paper No. 4,
9 pages (dated February 11, 1997)

Office Action, from File History of U.S. Patent No. 5,922,534, Paper No.
5, 6 pages (dated May 13, 1997)

Amendment 37 C.F.R. 1.116, from File History of U.S. Patent No.
5,922,534, Paper No. 6, 7 pages (dated July 14, 1997)

Response to Office Action, from File History of U.S. Patent No.
5,922,534, Paper No. 11, 4 pages (dated October 27, 1997)

Amendment Under 37 CFR 1.116, from File History of U.S. Patent No.
5,922,534, Paper No. 14, 5 pages (dated March 13, 1998)

Resume, William C. LaCourse, 8 pages (undated)

U.S. Patent No. 5,922,534

Curriculum Vitae of James G. Wetmur, 7 pages (dated June 22, 2003)

Letter from Lauren Stevens to Deborah Neville, Esq. of Hewlett-Packard
Company (with the Table of Contents of Volumes I and II
attached, but without volumes I and II), 5 pages (dated July 19,
1994)

Letter from Lauren Stevens to Deborah Neville, Esq. of Hewlett-Packard
Company (with the Table of Contents for the Patent Publications
attached, but without the referenced binder attached), 3 pages
(dated July 20, 1994)

Letter from Lauren Stevens to Deborah Neville of Hewlett-Packard
Company regarding Affymetrix Technology License Agreement, 2
pages (dated July 21, 1994)

Facsimile letter from Lauren Stevens to Deborah Neville of Hewlett-
Packard Company, 1 page (dated July 26, 1994)

Memo from Lauren Stevens to Affymax "Hewlett-Packard File" regarding
"due diligence" (without attachment), 1 page (dated August 4,
1994)

Wetmur et al., "Light-Directed, Spatially Addressable Parallel Chemical
Synthesis," Chemtracts – Biochem. Mol. Biol. 2:207-10 (1991)

Stryer, L., "Restriction Fragments can be Separated by Gel
Electrophoresis and Visualized," from Biochemistry, Third
Edition, published by W.H. Freeman & Co., pp. 119 (1988)

U.S. Patent No. 4,996,142

List of Affymetrix internal file numbers, 8 pages (undated)

Affymetrix Patent Portfolio – Overview, 10 pages (undated)

Declaration of James G. Wetmur, in U.S. Interference No. 105,089, 16 pages (dated June 25, 2003)

Declaration of William C. LaCourse, in U.S. Interference No. 105,089, 13 pages (dated June 26, 2003)

Declaration of Vernon A Norviel, in U.S. Interference No. 105,089, 6 pages (dated June 27, 2003)

Declaration of Lauren Stevens, in U.S. Interference No. 105,089, 7 pages (dated June 26, 2003)

Office action, from U.S. Application No 08/412,498, 8 pages, (dated October 7, 1996)

Office action, from U.S. Application No. 08/412,498, 4 pages (dated September 3, 1997)

Office action, from U.S. Application No. 08/412,498, 5 pages (dated January 21, 1998)

Office action, from U.S. Application No. 09/337,710, 5 pages (dated October 3, 2000)

Declaration of Power of Attorney for Patent Application, from U.S. Application No. 08/412,498, 1 page (dated March 28, 1995)

Notice of Appeal, from File History of U.S. Patent No. 5,922,534, Paper No. 7, 1 page (dated August 4, 1997)

Associate Power of Attorney, from US. Application No. 09/337,710, 1 page (dated June 21, 1999)

Appointment of Associate Attorney/Agent 37 CFR 1.34(b), from U.S. Application No. 08/412,498, 2 pages (dated August 4, 1997)

U.S. Patent No. 6,171,797

U.S. Patent No. 6,221,653

U.S. Patent No. 6,235,483

U.S. Patent No. 6,346,423

Letter from Renee Lamantia to Norviel, 1 page (dated July 22, 1994)

Facsimile letter from Peter Dehlinger to Norviel regarding Affymetrix technology, 2 pages (dated August 23, 1994)

U.S. Patent No. 6,458,583

Letter dated October 26, 1994, from Norviel to Neville.

Letter from Wendy Choi to Norviel regarding review of the Affymetrix patent portfolio by Hewlett-Packard, 1 page (dated August 7, 1997)

Letter from Roberta L. Robins to Norviel regarding review of the Affymetrix patent portfolio by Hewlett-Packard, 1 page (dated August 19, 1997)

Summary of References Provided to Hewlett-Packard, 4 page (undated)

Facsimile from Affymetrix to Ed Wong and Deborah Neville attaching Affymetrix Patent Portfolio – Overview, 12 pages (dated November 11, 1994)

Table of references cited by Gordon Stewart, 27 pages (undated)

Agilent Technologies to Expand its Life Science Market Presence with Introduction of New DNA Micro-Array Program, Press Releases, 2 pages (December 14, 1999)

U.S. Patent No. 5,412,087

Affymetrix Patent Specification 09/614,068, 199 pages, filed July 11, 2000

Webster's II New College Dictionary, Houghton Mifflin Company, Boston, Mass. USA, p. 787 (1995)

Davis et al., "Making Synthetic mDNA Probes: General Description," in Basic Methods in Molecular Biology, Elsevier, New York, New York USA, p. 68. (1986).

Lab Notebook pages 98-106 from Kay Lichtenwalter's lab notebook no. 1416.

Gate, Oligonucleotide Synthesis, A Practical Approach, IRL Press, Oxford, England, 235 pages (1984)

"Evaporation," in Encyclopedia of Chemistry (4th ed.), Van Nostrand Reinhold Company, New York, New York, USA, p. 366 (1984)

"Chemistry for Automated DNA/RNA Synthesis," Section 6 in Models 392 and 394 DNA/RNA Synthesizer manual, pp. 6-1 – 6-36, Applied Biosystems (1991)

U.S. Patent 5,491,570 issued May 27, 1986.

Office Action, Paper 5, Application 08/412,498, 6 pages (dated May 13, 1997)

Declaration of Henri M. Sasmor, in US. Interference No. 105,089, 15 pages (dated June 27, 2003)

- Davis et al., in Basic Methods in Molecular Biology, Elsevier Science Publishing Co., Inc., New York, New York, USA, pp.62-65 and 75-78 (1986)
- CV of Henri M. Sasmor, 2 pages (undated)
- WO 85/01051
- Chow et al., "A high capacity, reusable oligodeoxythymidine affinity column," Anal Biochem. 175:63-66, Academic Press, New York, New York (1988)
- Dunn et al., "Mapping viral mRNAs by sandwich hybridization," Meth. Enzymol. 65(1):468-478, Academic Press, New York, New York (1980)
- Weetall et al., "Covalent coupling methods for inorganic support materials," Methods Enzymol. 44: 134-148, Academic Press, New York, New York (1976)
- Rentrop et al., "Aminoalkylsilane-treated glass slides as support for in situ hybridization of keratin cDNAs to frozen tissue sections under varying fixation and pretreatment conditions," Histochem. J. 18(5):271-276, Chapman and Hall, London, England (1986)
- Matteucci et al., "Synthesis of deoxyoligonucleotides on a polymer support," J. Am. Chem. Soc. 103:3185-3191, American Chemical Society, Washington, D.C. (1981)
- Jönsson et al., "Surface immobilization techniques in combination with ellipsometry," Methods Enzymol. 137:381-388, Academic Press, New York, New York (1988)
- Maniatis et al., in MOLECULAR CLONING; A LABORATORY MANUAL, Cold Spring Harbor Press, pp. 313-315 and 326-328 (1982).
- Kessler, "Nonradioactive Labeling Methods for Nucleic Acids," Chapter 2 in Nonisotopic DNA Probe Techniques, edited by Larry Kricka, Academic Press, Inc., Sandiego, California, USA, pp. 29-92 (1991).
- WO 89/10977
- Dyson, "Immobilization of Nucleic Acids and Hybridization Analysis," Chapter 5 in Essential Molecular Biology Volume II: A Practical Approach, edited by T.A. Brown, IRL Press, Oxford, England, pp. 111-156 (1991).
- U.S. Patent No. 4,563,417
- U.S. Patent No. 4,994,373

Preliminary Amendment and Request for Interference Under 37 CFR 607,
Paper 2 to Application Ser. No. 09/614,068 14 pages, (dated
September 6, 2000)

Supplemental Amendment, Paper 14, to Application Serial No.
09/614,068, 10 pages (dated April 12, 2002)

Declaration of Scott M. K. Lee, in US Interference No. 105,089, 5 pages
(dated August 20, 2003)

Declaration of Salvatore J. Arrigo, in US Interference No. 105,089, 5
pages (dated August 20, 2003)

Declaration of Richard W. Evans, in US Interference No. 105,089, 4
pages (dated August 20, 2003)

- ☐ Publication(s) ___ listed on the attached Form PTO-1449 were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- ☐ Enclosed is a copy of a non-English publication(s) ___. English language publication ___ (copy enclosed) claims priority from this non-English publication.
- ☒ Documents 156, 165, 166, 432, 433, 579, 596 and 608 are non-English publications. English abstracts are attached to documents 156 and 165. English abstracts may be found on the front pages of documents 596 and 608. An English abstract for document 166 may be found attached to document 165. Document 183 is an English language re-publication of the Russian original, which is attached at the end of the document. No English abstract is readily available for documents 432, 433 and 579. Applicants believe that document 432 is an opposition to EP patent 0834576. Applicants believe that document 433 is an opposition to EP patent 0834576. Applicants believe that document 579 is a publication describing the synthesis of oligonucleotides on a polymeric carrier.
- ☒ The Examiner's attention is directed to related co-pending United States Patent Application Serial Nos.:
10/098,485, filed March 18, 2002, cited previously as US 2003/0104411;
10/102,774, filed March 22, 2002, cited previously as US 2002/0192684;

10/102,915, filed March 22, 2002, cited previously as US 2003/0003475;
10/098,484, filed March 18, 2002, cited previously as US 2003/0119011;
10/125,428, filed April 19, 2002, cited previously as US 2002/0155491;
10/125,460, filed April 19, 2002, cited previously as US 2002/0155492;
10/125,530, filed April 19, 2002, cited previously as US 2003/0017484;
10/694,536, filed October 28, 2003, cited previously as US 2004/0248147;
10/993,432, filed November 22, 2004, cited previously as US 2005/0112676;
10/992,782, filed November 22, 2004, cited previously as US 2005/0158743; and
10/992,772, filed November 22, 2004, cited previously as US 2005/0164249.

The following copending applications contain claims generally directed to a collection of coded beads (10/125,428); methods of analyzing expression comprising hybridizing to beads (10/125,460); and an apparatus comprising beads (10/125,530). Upon information and belief, all three applications are currently assigned to Examiner Goldberg.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☐ before the mailing date of a first office action on the merits; or
- ☒ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO-1449 to the undersigned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 50-1283.

Dated: 5-4-07

USPTO Customer No. 000033522

COOLEY GODWARD KRONISH LLP

ATTN: Patent Group

1200 19th Street, NW Suite 500

Washington, DC 20036-2412

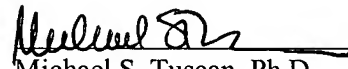
Phone: (202) 842-7800

Fax: (202) 842-7899

Respectfully submitted,

COOLEY GODWARD KRONISH LLP

By:



Michael S. Tuscan, Ph.D.

Reg. No. 43,210

Appendix A

Independent Claims of US 5,744,305:

1. An array of oligonucleotides, the array comprising:

a planar, non-porous solid support having at least a first surface; and

a plurality of different oligonucleotides attached to the first surface of the solid support at a density exceeding 400 different oligonucleotides/cm², wherein each of the different oligonucleotides is attached to the surface of the solid support in a different predefined region, has a different determinable sequence, and is at least 4 nucleotides in length.

15. An array of polynucleotides, the array comprising:

a planar non-porous solid support having at least a first surface; and

a plurality of different polynucleotides attached to the first surface of the solid support at a density exceeding 400 different polynucleotides/cm², wherein each of the different polynucleotides is attached to the surface of the solid support in a different predefined region, has a different determinable sequence, and is at least 4 nucleotides in length.

Independent Claims of US 5,800,992:

1. A method for detecting nucleic acid sequences in two or more collections of nucleic acid molecules, the method comprising:

(a) providing an array of polynucleotides bound to a solid surface, each said polynucleotide comprising a determinable nucleic acid;

(b) contacting the array of polynucleotides with:

(i) a first collection of labelled nucleic acid comprising a sequence substantially complementary to a nucleic acid of said array, and

(ii) at least a second collection of labelled nucleic acid comprising a sequence substantially complementary to a nucleic acid of said array;

wherein the first and second labels are distinguishable from each other; and

(c) detecting hybridization of the first and second labelled complementary nucleic acids to nucleic acids of said arrays.

4. A method of detecting differential expression of each of a plurality of genes in a first cell type with respect to expression of the same genes in a second cell type, said method comprising:

adding a mixture of labeled nucleic acid from the two cell types to an array of polynucleotides representing a plurality of known genes derived from the two cell types, under conditions that result in hybridization to complementary-sequence polynucleotides in the array; and

examining the array by fluorescence under fluorescence excitation conditions in which polynucleotides in the array that are hybridized to labeled nucleic acid derived from one of the cell types give a distinct fluorescence emission color and polynucleotides in the array that are hybridized to labeled nucleic acid derived from the other cell types give a different fluorescence emission color.

Independent Claims of US 5,795,716:

1. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising:

computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with at least one nucleic acid sequence including said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that performs a comparison of said plurality of probe intensities to each other;

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequences of said nucleic acid probes; and

a computer readable medium that stores said computer codes.

2. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising:

computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that calculates a ratio of a higher probe intensity to a lower probe intensity;

computer code that generates a base call identifying said unknown base according to a base of a nucleic acid probe having said higher probe intensity if said ratio is greater than a predetermined ratio value; and

a computer readable medium that stores said computer codes.

3. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising:

computer code that receives a first set of signals corresponding to a first set of probe intensities, each probe intensity in said first set indicating an extent of hybridization of a nucleic acid probe with a reference nucleic acid sequence, and each nucleic acid probe differing from each other by at least a single

base;

computer code that receives a second set of signals corresponding to a second set of probe intensities, each probe intensity in said second set indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that performs a comparison of at least one of said probe intensities in said first set and at least one of said probe intensities in said second set;

computer code that generates a base call identifying said unknown base according to results of said comparisons said sequence of said nucleic acid probe; and

a computer readable medium that stores said computer codes.

4. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising:

computer code that receives signals corresponding to statistics about a plurality of experiments, each of said experiments producing probe intensities, each probe intensity indicating an extent of hybridization of a nucleic acid probe with a reference nucleic acid sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that receives a plurality of signals corresponding to probe intensities, each probe intensity indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that performs a comparison of at least one of said plurality of probe intensities with said statistics;

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequence of said nucleic acid probe; and

a computer readable medium that stores said computer codes.

5. A system that identifies an unknown base in a sample nucleic acid sequence, comprising:

a processor; and

a computer readable medium coupled to said processor for storing a computer program comprising:

computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with at least one nucleic acid sequence including said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that performs a comparison of said plurality of probe intensities to each other; and

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequences of said nucleic acid probes.

6. A system that identifies an unknown base in a sample nucleic acid sequence, comprising:

a processor; and

a computer readable medium coupled to said processor for storing a computer program comprising:

computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that calculates a ratio of a higher probe intensity to a lower probe intensity; and

computer code that generates a base call identifying said unknown base according to a base of a nucleic acid probe having said higher probe intensity if said ratio is greater than a predetermined ratio value.

7. A system that identifies an unknown base in a sample nucleic acid sequence, comprising:

a processor; and

a computer readable medium coupled to said processor for storing a computer program comprising:

computer code that receives a first set of signals corresponding to probe intensities, each probe intensity in said first set indicating an extent of hybridization of a nucleic acid probe with a reference nucleic acid sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that receives a second set of signals corresponding to probe intensities, each probe intensity in said second set indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that performs a comparison of at least one of said probe intensities in said first set and at least one of said probe intensities in said second set; and

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequence of nucleic acid probe.

8. A system that identifies an unknown base in a sample nucleic acid sequence, comprising:

a processor; and

a computer readable medium coupled to said processor for storing a computer program comprising:

computer code that receives signals corresponding to statistics about a plurality of experiments, each of said experiments producing probe intensities, each probe intensity indicating an extent of hybridization of a nucleic acid probe with a reference nucleic acid sequence, and each nucleic acid probe differing from each other by at least a single base;

computer code that receives a plurality of signals corresponding to probe intensities, each probe intensity indicating an extent of hybridization of a nucleic acid probe with said sample sequence, and each nucleic

acid probe differing from each other by at least a single base;

computer code that performs a comparison of at least one of said plurality of probe intensities with said statistics; and

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequence of said nucleic acid probe.

Appendix B

Independent Claims of US 5,445,934:

1. A substrate with a surface comprising 10^3 or more groups of oligonucleotides with different, known sequences covalently attached to the surface in discrete known regions, said 10^3 or more groups of oligonucleotides occupying a total area of less than 1 cm^2 on said substrate, said groups of oligonucleotides having different nucleotide sequences.
7. An array of more than 1,000 different groups of oligonucleotide molecules with known sequences covalently coupled to a surface of a substrate, said groups of oligonucleotide molecules each in discrete known regions and differing from other groups of oligonucleotide molecules in monomer sequence, each of said discrete known regions being an area of less than about 0.01 cm^2 and each discrete known region comprising oligonucleotides of known sequence, said different groups occupying a total area of less than 1 cm^2 .

Appendix C

Asserted claims of US 5,545,531:

1. A method for making a biological chip plate comprising the steps of:
 - (a) providing a body comprising a plurality of wells defining spaces;
 - (b) providing a wafer comprising on its surface a plurality of probe arrays, each probe array comprising a collection of probes, at least two of which are different, arranged in a spacially defined and physically addressable manner;
 - (c) attaching the wafer to the body so that the probe arrays are exposed to the spaces of the wells.
2. The method of claim 1 wherein the probes are DNA or RNA molecules.
3. A method for making a biological chip plate comprising the steps of providing a wafer comprising on its surface a plurality of probe arrays, each probe array comprising a collection of probes, at least two of which are different, arranged in a spacially defined and physically addressable manner; and applying a material resistant to the flow of a liquid sample so as to surround the probe arrays, thereby creating test wells.
4. The method of claim 3 wherein the probes are DNA or RNA molecules.

Asserted claims of US 5,795,716:

1. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising:
 - computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with at least one nucleic acid sequence including said sample sequence, and each nucleic acid probe differing from each other by at least a single base;
 - computer code that performs a comparison of said plurality of probe intensities to each other;
 - computer code that generates a base call identifying said unknown base according to results of said comparison and said sequences of said nucleic acid probes; and
 - a computer readable medium that stores said computer codes.
5. A system that identifies an unknown base in a sample nucleic acid sequence, comprising:
 - a processor; and
 - a computer readable medium coupled to said processor for storing a computer program comprising:
 - computer code that receives a plurality of signals corresponding to probe intensities for a plurality of nucleic acid probes, each probe intensity indicating an extent of hybridization of a nucleic acid probe with at least one nucleic acid sequence including said sample sequence, and each nucleic acid probe differing from each other by at least a single base;
 - computer code that performs a comparison of said plurality of probe intensities to each other; and

computer code that generates a base call identifying said unknown base according to results of said comparison and said sequences of said nucleic acid probes.

9. A system according to claims 5, 6, 7, or 8, wherein the plurality of nucleic acid probes are in an array of probes.

10. A system according to claims 5, 6, 7, or 8, wherein the plurality of probe intensities are fluorescent intensities.

Asserted claims of US 6,355,432:

2. The collection of claim 1, wherein the binding polymer is an oligonucleotide having a given length and is selected from the group consisting of all possible oligonucleotide sequences having the same number of nucleotides.

5. The collection of claim 2, wherein the oligonucleotide sequences having the same number of nucleotides are at least 5 nucleotides long.

8. The collection of claim 2, wherein the oligonucleotide sequences having the same number of nucleotides are at least 10 nucleotides long.

9. The collection of claim 2, wherein at least 10,000 of all the possible oligonucleotide sequences having the same number of nucleotides are each attached to a different single bead.

Asserted claims of US 6,399,365:

1. A package for hybridization, comprising:
a substrate comprising a first surface including a probe array with different probes comprising biological polymers immobilized on said first surface; said probe array including a density exceeding 100 different biological polymers per cm^2 ; and
a housing including a fluid cavity constructed and arranged for hybridization of a target to a probe of said probe array, said housing including a bar code.

2. A package for hybridization, comprising:
an optically transparent chip comprising a first surface including an array of probes comprising biological polymers immobilized on said first surface; and
a housing including a fluid cavity constructed and arranged for hybridization of a target to a probe of said probe array located inside said fluid cavity, said housing including a bar code and being arranged for use with a detection system.

7. A probe array deposited on a substrate, comprising:
a probe array including different probes comprising biological polymers immobilized on said substrate and having a density exceeding 100 different biological polymers per cm^2 , and
a bar code.

10. A package for supporting a probe array, comprising:
an optically transparent chip comprising an array of different probes including biological polymers, immobilized on a surface of said chip;
a housing constructed to receive said chip; and
a bar code associated with said chip.
17. The package of claim 1, 2, 8 or 10, wherein said biological polymers include nucleic acids.
20. The package of claim 1, 2, 8 or 10, wherein each of said polymers are separately located within an area of about $1\ \mu\text{m}^2$ to about $1000\ \mu\text{m}^2$.
21. The package of claim 20, wherein said nucleic acids have a density exceeding 400 different nucleic acids per cm^2 .
22. The package of claim 20, wherein said nucleic acids have a density exceeding 1000 different nucleic acids per cm^2 .
24. The package of claim 1, 2, 8 or 10, wherein said biological polymers include oligonucleotides.
27. The package of claim 1, wherein said nucleic acids have a density exceeding 400 different nucleic acids per cm^2 .
28. The package of claim 1, wherein said nucleic acids have a density exceeding 1000 different nucleic acids per cm^2 .
29. The package of claim 10 wherein said biological polymers are in fluid communication.
30. The package of claim 10 wherein said biological polymers are separately located within an area of less than $10^{-2}\ \text{cm}^2$.
31. The package of claim 10 wherein there are more than 100 different sequences in the array.
32. The package of claim 10 wherein there are more than 1000 different sequences in the array.
35. The array of claim 7, wherein said biological polymers have a density exceeding 400 different nucleic acids per cm^2 .
36. The array of claim 7, wherein said biological polymers have a density exceeding 1000 different nucleic acids per cm^2 .
37. The array of claim 7, wherein said biological polymers include nucleic acids.
41. A method of using a probe array, comprising:
providing an array of probes, comprising biological polymers immobilized on a substrate, having a density exceeding 100 different polymers per cm^2 ;
providing a bar code associated with said probe array;
reading said bar code;
aligning said probe array with a detection system; and
detecting a signal from said probe array.

44. The method of using a probe array according to claim 41, wherein said detecting said signal includes detecting a fluorescent signal emitted from said probe array.
45. The method of using a probe array according to claim 41, wherein said detecting said signal comprises scanning said probe array to quantitatively analyze said hybridization between said probes and targets.
55. The method of using a probe array according to claim 41 or 47, wherein said biological polymers include nucleic acids.
58. The method of claims 41 or 47 wherein said reading step occurs either before or after either of said aligning and detecting steps.

Asserted claims of US 6,646,243:

14. An apparatus for analyzing nucleic acid binding, comprising: a substrate that comprises at least 1000 different spheres, beads, or particles having different species of nucleic acids attached thereto, the area of the substrate containing the at least 1000 spheres, beads, or particles being less than 1 cm², at least some of the nucleic acids being bound to fluorescently labeled target nucleic acids; a laser energy source to illuminate the fluorescent labels; a detector to detect a fluorescent label bound to said target nucleic acids; and a data collection system for storing fluoresced light intensity.
15. An apparatus in accordance with claim 14 wherein the substrate comprises wells, trenches or etched regions.
16. An apparatus in accordance with claim 14 wherein the detector comprises a microscope.
18. An apparatus in accordance with claim 14 wherein the wavelength of the laser is 488 nanometers or less.
19. An apparatus in accordance with claim 14 wherein the comprises beads.
20. An apparatus in accordance with claim 14 wherein the substrate comprises spheres.
21. An apparatus in accordance with claim 14 wherein the substrate comprises particles.
22. An apparatus in accordance with claim 18 wherein the substrate or its surface may be composed of a polymer, plastic, a resin, silica or silica-based materials, carbon, metals, or inorganic glasses.
24. An apparatus in accordance with claim 18 wherein the substrate or its surface may be composed of silica.
26. An apparatus in accordance with claim 14 wherein there are 10,000 different spheres, beads, or particles.
35. A method for screening large numbers of biological polymers, comprising: providing target nucleic acids; providing a substrate having an array of at least 1000 different beads, the different beads occupying

an area on a substrate of less than 1 cm^2 , at least some of the different beads having different nucleic acids covalently attached thereto; contacting the target nucleic acids and the beads so that after contact at least some of the nucleic acids on the beads hybridize to the target nucleic acids further comprising having fluorescently labeled nucleic acids bound thereto; illuminating the array with a laser energy source to excite the fluorescent labels; and detecting fluoresced light with a detector that is connected to a data storage system; and determining which nucleic acids on the beads have bound to target nucleic acids.

36. A method in accordance with claim 35 wherein the detector comprises a microscope.

39. A method in accordance with claim 35 wherein the fluorescent label is attached to the target nucleic acid before contact with the beads.

40. A method in accordance with claim 35 wherein the nucleic acids bound to the beads are oligonucleotides.

43. A method in accordance with claim 35 wherein the detector acquires data every 0.8 to 10 microns.

Asserted claims of US 6,607,887:

1. A method of identifying an unknown base in a sample nucleic acid sequence, comprising: inputting probe intensities for a plurality of nucleic acid probes that differ by a base at an interrogation position corresponding to the unknown base, each probe intensity indicating hybridization affinity between a nucleic acid probe and the sample nucleic acid sequence; analyzing the probe intensities and at least one probe intensity from a nucleic acid probe with an interrogation position corresponding to a position near the unknown base in the sample nucleic acid sequence; and generating a base call identifying the unknown base according to results of analyzing the probe intensities and the at least one probe intensity.

5. The method of claim 1, wherein the position near the unknown base in the sample nucleic acid sequence is adjacent to the unknown base.

7. A computer program product that identifies an unknown base in a sample nucleic acid sequence, comprising: computer code that receives probe intensities for a plurality of nucleic acid probes that differ by a base at an interrogation position corresponding to the unknown base, each probe intensity indicating hybridization affinity between a nucleic acid probe and the sample nucleic acid sequence; computer code that analyzes the probe intensities and at least one probe intensity from a nucleic acid probe with an interrogation position corresponding to a position near the unknown base in the sample nucleic acid sequence; computer code that generates a base call identifying the unknown base according to results of analyzing the probe intensities and the at least one probe intensity; and a computer readable medium that stores the computer codes.

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

PTO Form 1449

Attorney Docket No.
AFFY-003/26US

Application No.
10/694,541

Applicants: Stephen P.A. FODOR *et al.*

PAGE 1 of 46

Filing Date: October 28, 2003

Group Art Unit: 1634

U.S. PATENT DOCUMENTS

Initial		Document No.	Date	Name	Class	Sub-Class	Filing Date
	1.	07/362,901		Fodor <i>et al.</i>			Filed 06/07/1989
	2.	07/492,462		Pirrung <i>et al.</i>			Filed 03/07/1990
	3.	07/624,114		Fodor <i>et al.</i>			Filed 12/06/1990
	4.	07/796,243		Winkler <i>et al.</i>			Filed 11/22/1991
	5.	07/874,849		McGall <i>et al.</i>			Filed 04/22/1992
	6.	3642450	02/15/1972	Eriksson			
	7.	3690836	09/12/1972	Buissiere <i>et al.</i>			
	8.	4016855	04/12/1977	Mimata			
	9.	4039288	08/02/1977	Moran			
	10.	4086254	04/25/1978	Wierenga			
	11.	4159875	07/03/1979	Hauser			
	12.	4204929	05/27/1980	Bier			
	13.	4430299	02/07/1984	Horne			
	14.	4595562	06/17/1986	Liston <i>et al.</i>			
	15.	4608231	08/26/1986	Witty <i>et al.</i>			
	16.	4675299	06/23/1987	Witty <i>et al.</i>			
	17.	4676951	06/30/1987	Armes <i>et al.</i>			
	18.	4678894	07/07/1987	Shafer			
	19.	4719087	01/12/1988	Hanaway			
	20.	4802101	01/31/1989	Hara			
	21.	4811218	03/07/1989	Hunkapiller <i>et al.</i>			
	22.	4834946	05/30/1989	Levin			
	23.	4877965	10/31/1989	Dandliker <i>et al.</i>			
	24.	4996142	02/26/1991	Al-Hakim <i>et al.</i>			
	25.	5171534	12/15/1992	Smith <i>et al.</i>			
	26.	5219763	06/15/1993	Van Hoegaerden			
	27.	5300779	04/05/1994	Hillman <i>et al.</i>			
	28.	5306618	04/26/1994	Prober <i>et al.</i>			
	29.	5310469	05/10/1994	Cunningham <i>et al.</i>			
	30.	5318679	06/07/1994	Nishioka			
	31.	5320808	06/14/1994	Holen <i>et al.</i>			
	32.	5332666	07/26/1994	Prober <i>et al.</i>			
	33.	5412087	05/02/1995	McGall <i>et al.</i>			

Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449				Attorney Docket No. AFFY-003/26US		Application No. 10/694,541			
				Applicants: Stephen P.A. FODOR <i>et al.</i>				PAGE 2 of 46	
				Filing Date: October 28, 2003		Group Art Unit: 1634			
U.S. PATENT DOCUMENTS									
Initial		Document No.	Date	Name	Class	Sub-Class	Filing Date		
	34.	5491224	02/13/1996	Bittner et al.					
	35.	5491570	02/13/1996	Rakuljic et al.					
	36.	5658734	08/19/1997	Brock et al.					
	37.	5688642	11/18/1997	Chrissey et al.					
	38.	5770721	06/23/1998	Ershov et al.					
	39.	5837832	11/17/1998	Chee et al.					
	40.	5922534	07/13/1999	Lichtenwalter					
	41.	5959098	09/28/1999	Goldberg et al.					
	42.	6083697	07/04/2000	Beecher et al.					
	43.	6103463	08/15/2000	Chetverin <i>et al.</i>					
	44.	6140044	10/31/2000	Besemer <i>et al.</i>					
	45.	6171797	01/09/2001	Perbost					
	46.	6270961	08/07/2001	Drmanac					
	47.	09/654,948		Pirrung et al.			Filed 09/01/2000		
	48.	09/724,928		Fodor et al.			Filed 11/28/2000		
	49.	2002/0155588	10/24/2002	Fodor et al.					
	50.	2003/0119008	06/23/2003	Fodor et al.					
	51.	2003/0235853	12/25/2003	Stryer et al.					
	52.	2004/0029115	02/12/2004	Dower et al.					
	53.	2005/0079529	04/14/2005	Fodor et al.					
	54.	2005/0095652	05/05/2005	Fodor et al.					
	55.	2005/0118706	06/02/2005	Pirrung et al.					
	56.	2005/0148027	07/07/2005	Pirrung et al.					
	57.	2005/0153362	07/14/2005	Pirrung et al.					
	58.	2005/0153363	07/14/2005	Pirrung et al.					
	59.	2005/0214828	09/29/2005	Pirrung et al.					
	60.	2006/0210452	09/21/2006	Fodor et al.					
	61.	3825410	07/23/1974	Bagshawe					
	62.	4039288	08/02/1977	Moran					
	63.	4046750	09/06/1977	Rembaum					
	64.	4145406	03/20/1979	Schick et al.					
	65.	4225410	09/30/1980	Pace					
	66.	4259223	03/31/1981	Rembaum					
Examiner			Date Considered						
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.									

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449				Attorney Docket No. AFFY-003/26US		Application No. 10/694,541			
				Applicants: Stephen P.A. FODOR <i>et al.</i>				PAGE 3 of 46	
				Filing Date: October 28, 2003		Group Art Unit: 1634			
U.S. PATENT DOCUMENTS									
Initial		Document No.	Date	Name	Class	Sub-Class	Filing Date		
	67.	4263504	04/21/1981	Thomas					
	68.	4267234	05/12/1981	Rembaum					
	69.	4427415	01/24/1984	Cleveland					
	70.	4737454	04/12/1988	Dattagupta et al.					
	71.	4797355	01/10/1989	Stabinsky					
	72.	4837168	06/06/1989	de Jaeger et al.					
	73.	4889427	12/26/1989	Van Veen et al.					
	74.	4894796	01/16/1990	Engel et al.					
	75.	4933147	06/12/1990	Hollar et al.					
	76.	4963815	10/16/1990	Hafeman					
	77.	4997278	03/05/1991	Finlan et al.					
	78.	5035863	07/30/1991	Finlan et al.					
	79.	5047633	09/10/1991	Finlan et al.					
	80.	5112736	05/12/1992	Caldwell et al.					
	81.	5156810	10/20/1992	Ribi					
	82.	5173260	12/22/1992	Zander et al.					
	83.	5173747	12/22/1992	Boiarski et al.					
	84.	5196305	03/23/1993	Findlay et al.					
	85.	5229297	07/20/1993	Schnipelsky et al.					
	86.	5266498	11/30/1993	Tarcha et al.					
	87.	5270006	12/14/1993	Uchigaki et al.					
	88.	5291763	03/08/1994	Cuisinot					
	89.	5310469	05/10/1994	Cunningham et al.					
	90.	5320808	06/14/1994	Holen et al.					
	91.	5380489	01/10/1995	Sutton et al.					
	92.	5382512	01/17/1995	Smethers et al.					
	93.	5492840	02/20/1996	Malmqvist et al.					
	94.	5525464	06/11/1996	Drmanac et al.					
	95.	5541061	07/30/1996	Fodor et al.					
	96.	5543061	08/06/1996	Baskis					
	97.	5547839	08/20/1996	Dower et al.					
	98.	5573950	11/12/1996	Graessle et al.					
	99.	5578832	11/26/1996	Trulson et al.					
Examiner				Date Considered					
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.									

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449				Attorney Docket No. AFFY-003/26US		Application No. 10/694,541			
				Applicants: Stephen P.A. FODOR <i>et al.</i>				PAGE 4 of 46	
				Filing Date: October 28, 2003		Group Art Unit: 1634			

U.S. PATENT DOCUMENTS							
Initial		Document No.	Date	Name	Class	Sub-Class	Filing Date
	100.	5639612	06/17/1997	Mitsuhashi et al.			
	101.	5889165	03/30/1999	Fodor et al.			
	102.	5976896	11/02/1999	Kumar et al.			
	103.	6063339	05/16/2000	Tisone et al.			
	104.	6225625	05/01/2001	Pirrung et al.			
	105.	6316191	11/13/2001	Drmanac et al.			
	106.	6329143	12/11/2001	Stryer et al.			
	107.	6379895	04/30/2002	Fodor et al.			
	108.	6416952	07/09/2002	Pirrung et al.			
	109.	6468740	10/22/2002	Holmes			
	110.	6491871	12/10/2002	Fodor et al.			
	111.	6506558	01/14/2003	Fodor et al.			
	112.	6566495	05/20/2003	Fodor et al.			
	113.	6600031	07/29/2003	Fodor et al.			
	114.	6630308	10/07/2003	Stryer et al.			
	115.	6660234	12/09/2003	Stryer et al.			
	116.	6747143	06/08/2004	Stryer et al.			
	117.	6919211	07/19/2005	Fodor et al.			
	118.	6955915	10/18/2005	Fodor et al.			
	119.	7015046	03/21/2006	Wohlstadter et al.			
	120.	7064197	06/20/2006	Rabbani et al.			
	121.	7125674	10/24/2006	Beattie			

FOREIGN PATENT DOCUMENTS							
		Document No.	Date	Country	Class	Sub-Class	Translation
	122.	EP 0 063 810 A1	11/03/1982	Europe			
	123.	EP 0 171 150 A2	02/12/1986	Europe			
	124.	EP 0 212 314 A2	03/04/1987	Europe			
	125.	EP 0 212 314 A3	07/19/1989	Europe			
	126.	EP 0 212 314 B1	04/27/1994	Europe			
	127.	EP 0 235 726 A2	09/09/1987	Europe			
	128.	EP 0 237 362 A1	09/16/1987	Europe			
	129.	EP 0 268 237 A3	11/30/1988	Europe			
	130.	EP 0 353 592 A2	02/07/1990	Europe			

Examiner	Date Considered
----------	-----------------

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449				Attorney Docket No. AFFY-003/26US		Application No. 10/694,541			
				Applicants: Stephen P.A. FODOR <i>et al.</i>				PAGE 5 of 46	
				Filing Date: October 28, 2003				Group Art Unit: 1634	
FOREIGN PATENT DOCUMENTS									
		Document No.	Date	Country	Class	Sub-Class	Translation		
	131.	EP 0 353 592 A3	05/29/1991	Europe					
	132.	EP 0 353 592 B1	04/24/1996	Europe					
	133.	EP 0 373 203 A0	06/20/1990	Europe					
	134.	EP 0 373 203 B1	08/31/1994	Europe					
	135.	EP 0 373 203 B2	02/14/2007	Europe					
	136.	EP 0 378 968 A2	07/25/1990	Europe					
	137.	EP 0 378 968 A3	06/12/1991	Europe					
	138.	EP 0 445 915 A1	09/11/1991	Europe					
	139.	EP 0 514 927 A1	11/25/1992	Europe					
	140.	EP 0 619 321 B1	01/07/1999	Europe					
	141.	EP 0 624 059 A0	05/27/1993	Europe					
	142.	EP 0 834 576 A2	04/08/1998	Europe					
	143.	EP 0 834 576 A3	06/16/1999	Europe					
	144.	EP 0 834 576 B1	01/16/2002	Europe					
	145.	GB 1561042	02/13/1980	Great Britain					
	146.	WO 90/05910 A1	05/31/1990	WIPO					
	147.	WO 92/10587 A1	06/25/1992	WIPO					
	148.	WO 93/09668 A1	05/27/1993	WIPO					
	149.	WO 93/22053 A1	11/11/1993	WIPO					
	150.	WO 93/22058 A1	11/11/1993	WIPO					
	151.	WO 93/22680 A1	11/11/1993	WIPO					
	152.	WO 95/09248 A1	04/06/1995	WIPO					
	153.	WO 95/20681 A1	08/03/1995	WIPO					
	154.	WO 95/25116 A1	09/21/1995	WIPO					
	155.	WO 95/35505 A1	12/28/1995	WIPO					
	156.	JP 58-009070	01/19/1983	Japan			Abstract attached		
	157.	EP 0 377 729 A0	07/18/1990	Europe					
	158.	EP 0 377 729 A4	10/24/1990	Europe					
	159.	EP 0 377 729 B1	08/25/1993	Europe					
	160.	EP 0 416 038 A0	01/11/1990	Europe					
	161.	EP 0 416 038 A4	01/08/1992	Europe					
	162.	EP 0 416 038 B1	03/26/1997	Europe					
	163.	EP 0 677 194 A0	05/24/1996	Europe					
Examiner				Date Considered					
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.									

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449				Attorney Docket No. AFFY-003/26US		Application No. 10/694,541			
				Applicants: Stephen P.A. FODOR <i>et al.</i>				PAGE 6 of 46	
				Filing Date: October 28, 2003				Group Art Unit: 1634	
FOREIGN PATENT DOCUMENTS									
		Document No.	Date	Country	Class	Sub-Class	Translation		
	164.	EP 0 677 194 A4	01/17/1996	Europe					
	165.	FR 2684688	06/11/1993	France			Abstract attached		
	166.	EP 0 549 388 A1	06/30/1993	Europe			Abstract attached to FR 2684688		
	167.	EP 0 631 635 A0	09/16/1993	Europe					
	168.	EP 0 631 635 B1	09/12/2001	Europe					
	169.	WO 92/20824 A1	11/26/1992	WIPO					
	170.	EP 0 381 501 A2	08/08/1990	Europe					
	171.	EP 0 381 501 A3	06/05/1991	Europe					
	172.	EP 0 381 501 B1	06/08/1994	Europe					
	173.	EP 0 396 116 A2	11/07/1990	Europe					
	174.	EP 0 396 116 A3	01/22/1992	Europe					
	175.	EP 0 396 116 B1	02/05/1997	Europe					
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)									
	176.	Declaration of Dr. Michael C. Pirrung, submitted by Incyte and Synteni in Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc. litigations							
	177.	Declaration of Fodor, submitted by Incyte and Synteni in Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc. litigations							
	178.	Declaration of Leighton Read, submitted by Incyte and Synteni in Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc. litigations							
	179.	Declaration of Stryer, submitted by Incyte and Synteni in Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc. litigations							
	180.	"Order granting motion for partial summary judgment of claims 1-3 of U.S. Patent No. 5,800,992 for indefiniteness of 'substantially complementary,'" 12 pages, submitted by Incyte and Synteni in Affymetrix, Inc. v. Synteni, Inc., and Incyte Pharmaceuticals, Inc. litigations (September 20, 2001)							
	181.	Crkvenjakov, Talk presented at DOE/NIH Human Genome Sequencing Conference in Santa Fe, NM							
	182.	Format 3 SBH Super Chip							
Examiner				Date Considered					
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.									

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 7 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	183.	Lysov et al., "A New Method for Determining the DNA Nucleotide Sequence by Hybridization with Oligonucleotides," Abstract of Human Genome I: An International Conference on the Status and Future of Research on the Human Genome (October 1989)	
	184.	Mirzabekov, "Sequencing of DNA by Hybridization with oligonucleotides matrix (SHOM)," Engelhardt Institute of molecular Biology Grant Application (March 1992) ("Mirzabekov Grant Application, 1992")	
	185.	"Facts and Submissions," in opposition to EP 1 086 742, 40 pages (dated July 26, 2006)	
	186.	"Interlocutory Decision in Opposition Proceedings," in opposition to EP 1 086 742, 2 pages (dated July 26, 2006)	
	187.	"Maintenance of the patent with the documents specified in the final decision," in opposition to EP 1 086 742, 1 page (Dated November 4, 2006)	
	188.	Declaration of Grant Morgan, in Japanese Patent Application No. 8-324451, 15 pages (dated September 16, 2002)	
	189.	Claims as granted of EP 834575, 2 pages, (November 28, 2001)	
	190.	Interlocutory decision in Opposition proceedings, in the Opposition to EP 0834575, 33 pages (dated January 24, 2005)	
	191.	Analysis of ECLA classification of D1 and D2, 3 pages (submitted August 8, 2005)	
	192.	"Summary of Facts and Submissions," including preliminary opinion, in the Opposition to EP 0834575, 22 pages (dated July 14, 2004)	
	193.	Communication concerning Oral Proceeding Minutes, in the Opposition to EP 0834575, 9 pages (dated December 30, 2004)	
	194.	Interlocutory decision in Opposition proceedings, in the Opposition to EP 0834575, 19 pages (dated January 24, 2005)	
	195.	"Summary of Facts and Submissions," in the Opposition to EP 0834575, 32 pages (dated January 24, 2005)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 8 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	196.	"Notice of Appeal," filed by Affymetrix in the Opposition to EP 0834575, 1 page (dated March 23, 2005)	
	197.	Golub et al, "Molecular Classification of Cancer: Class Discovery and Class Prediction by Gene Expression Monitoring," Science 286:531-537 (1999)	
	198.	Southern et al. "Parallel synthesis and analysis of large numbers of related chemical compounds: applications to oligonucleotides," Journal of Biotechnology 35:217-227 (1994)	
	199.	Declaration of Professor Anthony Edward George Cass, in the matter of EP application no. 99202455.4, 25 pages (undated)	
	200.	Declaration of Dr. James Gerard Wetmur, in the matter of EP 0 834 575, 18 pages (dated October 28, 2003)	
	201.	Janowski et al., "Aminopropylsilane Treatment for the Surface of Porous Glasses Suitable for Enzyme Immobilisation," J. Chem. Tech. Biotechnol. 51:263-272 (1991)	
	202.	Kazazlan, "Chapter 14. Use of PCR in the Diagnosis of Monogenic Disease," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 153-169 (1989)	
	203.	Erlich and Bugawan, "Chapter 16. HLA Class II Gene Polymorphism: DNA Typing, Evolution, and relationship to Disease Susceptibility," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 193-204 (1989)	
	204.	Downs et al., "New DNA Technology and the DNA Biosensor," Analytical Letters 20(12):1897-1927 (1987)	
	205.	Submission by Opponent 2 Metragen, Inc.(Successor-In-Interest to Protogene Laboratories, Inc.) in opposition to European Patent No 0 619 321, 57 pages (dated September 27, 2003)	
	206.	Statement of Dr. Paul H. Silverman in the opposition to EP 0619321, 7 pages (dated July 25, 2003)	
	207.	Coassin, Meeting with Affymax Researcher at Human Genome III Poster Presentation, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)	
	208.	Silverman, Affymax and Human Genome III, Oct. 21-23, San Diego, 2 pages, in the opposition to EP 0619321 (submitted July 29, 2003)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 9 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	209.	Declaration of Dennis W. Solas, in U.S. Patent and Trademark Office Interference Proceeding No. 104,359, 9 pages (dated May 28, 1999)	
	210.	OGT v. Affymetrix, Affymetrix' Opening Submissions, HC 1999 02517, HC 1999 04645 (March 22,2001) 81 pages (submitted July 29, 2003)	
	211.	Chronology of the Patentee's Efforts to Develop Polynucleotide Arrays, in the opposition to EP 0619321, 5 pages (submitted July 29, 2003)	
	212.	Prosecution history of US application 07/362,901, 55 pages, in the opposition to EP 0619321 (submitted July 29, 2003)	
	213.	In the matter of Oxford Gene Technologies v. Affymetrix, Inc., Court transcript of November 8, 2000, 21 pages, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)	
	214.	Chronology of the Patentee's Efforts to Reduce Region Size, in the opposition to EP 0619321, 6 pages (submitted July 29, 2003) (submitted July 29, 2003)	
	215.	Jacobs et al., "Combinatorial chemistry – applications of light-directed chemical synthesis," TIBTECH 12:19-26 (1994)	
	216.	Gallop et al., "Applications of Combinatorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," J. Med. Chem. 37:1233-1251 (1994)	
	217.	Lipshutz et al., "Advanced DNA sequencing technologies," Current Opinion in Structural Biology 4:376-380 (1994)	
	218.	Wrotnowski, "Biochip Technology Offers Powerful Tool for Research and Diagnostics," 1page, Genetic Engineering News (1994)	
	219.	McGall et al., "Light-directed synthesis of high-density oligonucleotide arrays using semiconductor photoresists," Proc. Natl. Acad. Sci. USA 93:13555-13560 (1996)	
	220.	Beecher et al., "Chemically Amplified Photolithography for the Fabrication of High Density Oligonucleotide Arrays," Polym. Mater. Sci, Eng. 76: 597-598 (1997)	
	221.	Anderson et al., "Polynucleotide Arrays for Genetic Sequence Analysis," Topics in Current Chemistry 194:117-129 (1997)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 10 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	222.	Lipshutz et al., "High density synthetic oligonucleotide arrays," Nature Genet., suppl. 21:20-24 (1999)	
	223.	Barone et al., "Photolithographic Synthesis of High Density Oligonucleotide Probe Arrays," Nucleosides, Nucleotides & Nucleic Acids 20(4-7):525-531 (2001)	
	224.	Amendment filed with the United States Patent Office during prosecution of application no. 08/466,632, dated September 23, 1996, 8 pages (submitted July 29, 2003)	
	225.	Declaration of Dr. Marc M. Greenberg, in the opposition to EP 0619321, 11 pages (dated July 28, 2003)	
	226.	Curriculum vitae of Marc M. Greenberg, 25 pages (publication date unknown)	
	227.	Venkatesan et al., "Improved Utility of Photolabile Solid Phase Synthesis Supports for the Synthesis of Oligonucleotides Containing 3'-Hydroxyl termini," J. Org. Chem. 61:525-529 (1996)	
	228.	Pirrung et al., "3'-Nitrophenylpropyloxycarbonyl (NPPOC) Protecting Groups for High-Fidelity Automated 5'→3' Photochemical DNA Synthesis," Organic Letters 3(8): 1105-1108 (2001)	
	229.	Beier et al., "Synthesis of Photolabile 5'-O-Phosphoramidites for the Photolithographic Production of Microarrays of inversely Oriented Oligonucleotides," Helvetica Chimica Acta 84:2089-2095 (2001)	
	230.	Wolter et al., "Polymer support oligonucleotide synthesis XX1): Synthesis of a Henhectacosa Deoxynucleotide by use of a dimeric phosphoramidite synthon," Nucleosides & Nucleotides 5(10):65-77 (1986)	
	231.	Sondek et al., "A General Strategy for Random Insertion and Substitution Mutagenesis: Substoichiometric Coupling of Trinucleotide Phosphoramidites," Proc. Natl. Acad. Sci. USA 89(8):3581-3585 (2003)	
	232.	Virnekas et al., "Trinucleotide phosphoramidites: ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis," Nucl. Acids Res. 22:5600-5607 (1994)	
	233.	Zehavi et al., "Light-Sensitive Glycosides. II. 2-Nitrobenzyl 6-Deoxy-α-L-mannopyranoside and 2-Nitrobenzyl 6-Deoxy-β-L-galactopyranoside," J. Org. Chem. 37(4):2285-2288 (1972)	
	234.	Usman et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an Escherichia coli Formylmethionine tRNA," J. Am. Chem. Soc. 109:7845-7854 (1987)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 11 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	235.	Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," Nucl. Acids Res. 23(14):2677-2684 (1995)	
	236.	Scaringe et al., "Novel RNA Synthesis Method Using 5'-O-Silyl-2'-O-orthoester Protecting Groups," J. Am. Chem. Soc. 120:11820-11821 (1998)	
	239.	Stipp, "Gene Chip Breakthrough; Microprocessors have reshaped our economy, spawned vast fortunes, and changed the way we live. Gene chips could be even bigger," Fortune, p. 56 -6 page transcript (March 31, 1997)	
	238.	Online European Patent Register – Results, EP 0373203 record printout from July 28, 2003, in the opposition to EP 0619321, 3 pages (submitted July 29, 2003)	
	239.	Declaration of Edwin Mellor Southern, in the opposition to EP 0373203, with exhibits, 22 pages (January 16, 1998)	
	240.	First Confidential Witness Statement of Alan-Philippe Blanchard, in the opposition to EP 0619321, 4 pages (dated January 19, 2001)	
	241.	Expert Report of David Bowen Wallace, P.E., Ph.D., in the opposition to EP 0619321, 59 pages (dated January 18, 2001)	
	242.	Response of Affymetrix Inc. (Opponent VII) to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, in the opposition to EP 0619321, 50 pages (submitted July 29, 2003)	
	243.	Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metragen, Inc., 24 pages, in the opposition to EP 0619321 (submitted July 29, 2003)	
	243.	Reply of Affymetrix, Inc. to Oppositions by Incyte Pharmaceuticals, Inc., Protogene Laboratories, Inc., Multilyte Ltd. and Oxford Gene Technology Limited against European Patent No. 0 619 321, 82 pages (submitted October 17 2000)	
	246.	Interlocutory decision in the Opposition Proceedings, in the matter of EP 0373203, 25 pages (dated February 26, 2002)	
	246.	Summons to Attend Oral Proceedings Pursuant to Rule 71(1) EPC with annexes, 8 pages, in the matter of EP 0 619 321 (dated January 24, 2003)	
	247.	Agilent Technologies, "SurePrint technology," 14 pages (2003)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 12 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	248.	Results of experiments performed by Opponent 4, in the matter of EP 0 834 575, 3 pages (submitted October 1, 2004)	
	249.	Newman et al., "High resolution patterning system with a single bore objective lens," J. Vac. Sci. Technol. B. 5(1):88-90 (1987)	
	250.	"fingerprinting," in Dictionary of Science and Technology, Walker, Ed., Published by Larousse, p. 421 (1995)	
	251.	Augenlicht, "Gene Expression in Human Colonic Biopsies," in Basic an Clinical Perspectives of Colorectal Polyps an Cancer, Ed. Steele, G. et al., Alan R. Liss, Inc. NY, pp 195-202 (1988)	
	252.	Declaration of Professor John Sutherland, in the matter of EP 0 834 575, 13 pages (dated November 17, 2004)	
	253.	Declaration of Stephen Philip Alan Fodor, in the matter of EP 0 834 575, 15 pages (dated November 17, 2004)	
	254.	"distinguish," and "identify," in Oxford Advanced Learner's Dictionary of Current English, Cowie, Ed., Oxford University Press pp. 350, 615 and 616 (1989)	
	255.	Declaration by Julian Gordon for Opposing party Abbott Laboratories and Combimatrix Corp. in the matter of EP 0 834 575 B, 14 pages (dated May 24, 2005)	
	256.	Minutes of the public oral proceedings in EP 0373203 dated October 12, 2005	
	257.	Opposition to EP 0764214 by Clondia Chip Technologies GmbH, 33 pages (filed May 31, 2006)	
	258.	"Minutes of the oral proceedings before the Opposition Division," from oral proceedings in the opposition against EP 695 941 B1, 28 pages (dated April 15, 2006)	
	259.	Opposition to EP 0972564 by Applera Corporation, 19 pages (filed February 26, 2004)	
	260.	Response of Affymetrix to the opposition of EP 0972564 by Applera Corporation, 23 pages (dated January 12, 2005)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		Filing Date: October 28, 2003	PAGE 13 of 46 Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	261.	"Facts and Submissions," in the opposition to EP 0972564, 7 pages (dated July 19, 2005)	
	262.	Affymetrix's further observations in the opposition to EP 0972564, 4 pages (dated June 12, 2006)	
	263.	Third party observations in the opposition to EP 0972564, 17 pages (dated June 12, 2006)	
	264.	"Decision revoking the European Patent," in the opposition to EP 0972564, 20 pages (dated July 31, 2006)	
	265.	"Minutes of the oral proceedings before the Opposition Division," from oral proceedings in the opposition to EP 0972564, 4 pages (dated July 31, 2006)	
	266.	Grounds of Appeal as filed in the opposition to EP 0972564, 20 pages (dated December 7, 2006)	
	267.	Declaration of Professor Anthony Cass, in the Opposition to EP 0972564, 17 pages (dated January 5, 2005)	
	268.	Declaration of Professor John David Sutherland, in the Opposition to EP 0972564, 11 pages (dated January 4, 2005)	
	269.	Declaration of Professor John David Sutherland, in the Opposition to EP 0972564, 3 pages (dated June 7, 2006)	
	270.	Declaration of Professor Jon Cooper, in the matter of EP application no. 99202441.4, 19 pages (dated November 14, 2002)	
	271.	Declaration of Professor Anthony Cass, in the matter of EP application no. 99202441.4, 19 pages (dated November 13, 2002)	
	272.	"Summons to attend oral proceedings pursuant to Rule 71(1) EPC," in the Opposition to EP 0695941, 6 pages (dated October 6, 2005)	
	273.	"Minutes of the oral proceedings before the Opposition Division," in the Opposition to EP 0695941, 16 pages (dated April 5, 2006)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 14 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	274.	Annex of the auxiliary 5 claim amendments in the Opposition to EP 0695941, 20 pages (filed October 17, 2006)	
	275.	Declaration under 37 C.F.R. 1.132, Ann M. Pease, in the prosecution of US 07/624,114, 8 pages (dated August 12, 1992)	
	276.	Silverman, Notes Concerning the HUGO Sequencing By Hybridization Workshop, Moscow (18 -21 November 1991) , 7 pages	
	277.	Pirrung, NIH grant application, 21 pages (publication date unknown)	
	278.	Declaration of Michael C. Pirrung, in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C98-4508 FMS (MEJ), 21 pages (dated March 19, 1999)	
	279.	Opposition By Affymetrix, Inc. Against European Patent No. 0 373 203 of Isis Innovation Limited, Notice and Statement, 67 pages, in the opposition to EP 0619321 (submitted October 6, 1999)	
	280.	Declaration of Dr. Thomas Gingeras, Ph.D., in the opposition to EP 0619321, 10 pages (dated January 14, 1999)	
	281.	Declaration of Professor Calvin F. Quate, Ph.D., in the opposition to EP 0619321, 14 pages (dated January 9, 1999)	
	282.	Declaration of Glenn H. McGall, Ph.D. for Affymetrix in the opposition to EP 0619321, 10 pages (dated January 13, 1999)	
	283.	Response of Affymetrix, Inc. to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, 53 pages (filed February 3, 1997)	
	284.	Declaration of Professor Lubert Stryer, M.D., in the opposition to EP 0373203, 9 pages (dated January 28, 1997)	
	285.	Statutory Declaration of Dr. William Bains in the opposition to EP 0373203, 4 pages (dated January 30, 1997)	
	286.	Statutory Declaration of Dr. Nicholas Vaughan Ashley in the opposition to EP 0373203, 3 pages (undated)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 15 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	287.	Joint Claim Construction Statement in Affymetrix, Inc. v Synteni, Inc. And Incyte Pharmaceuticals, Inc., Case No. C98-4507, 39 pages (dated August 27, 1999)		
	288.	Declaration of Charles Cantor in Opposition to Plaintiff's Motion for a Preliminary Injunction, for Synteni, Inc. and Incyte Pharmaceuticals, Inc. in Case No. C98-4508 FMS (MEJ), 26 pages (dated March 19, 1999)		
	289.	Patentee's response to the Official Letter dated March 14, 1997 from the prosecution history of EP 0619321, 6 pages (dated February 19, 1998)		
	290.	Decision of 26 May 1993, in European Patent Application No. 86305459.9, 5 pages (dated May 26, 1993)		
	291.	Decision of 28 February 1996, in European Patent Application No. 84200792.4, 9 pages (dated February 28, 1996)		
	292.	Decision of Technical Board of Appeal, in European Patent Application No. 82100124.5, 10 pages (dated January 24 1989)		
	293.	Decision of Technical Board of Appeal, in European Patent Application No. 85304490.7, 16 pages (dated October 3, 1990)		
	294.	Decision of Technical Board of Appeal, in European Patent Application No. 87308436.2, 11 pages (dated March 18, 1993)		
	295.	Decision of Technical Board of Appeal, in European Patent Application No. 85301297.9, 14 pages (dated March 9, 1994)		
	296.	Statutory Declaration of Dr. Edwin Southern, in the opposition to EP 0619321, with exhibits, 18 pages (dated October 6, 1999)		
	297.	Declaration of Dr. Paul Silverman, in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C98-4507 WHA, 3 pages (dated November 23, 1999)		
	298.	Declaration of Professor John Sutherland, in the opposition to EP 0619321, 15 pages (dated October 13, 2000)		
	299.	Schulhof et al., "the final deprotection step in oligonucleotide synthesis is reduced to a mild and rapid ammonia treatment by using labile base-protecting groups," Nucl. Acids Res. 15(2):397-416 (1987)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 16 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	300.	Hayakawa et al., "Allylic protecting groups in solid-phase DNA synthesis," Nucl. Acids Res. 20:75-76 (1988)	
	301.	Hayakawa et al., "The Allylic Protection Method in Solid Phase Oligonucleotide Synthesis. An Efficient Preparation of Solid-Anchored DNA Oligomers," J. Am. Chem Soc. 112:1691-1696 (1990)	
	302.	Köster et al., "N-acyl protecting groups for deoxynucleosides. A quantitative and comparative study," Tetrahedron 37:363-369 (1981)	
	303.	Sproat et al., "A new linkage for solid phase synthesis of oligodeoxyribonucleotides," Nucl. Acids Res. 13(8):2979-2987 (1988)	
	304.	Pochet et al., "Synthesis of DNA fragments linked to a solid support," Tetrahedron 43(15):3481-3490 (1987)	
	305.	Katzhendler et al., "The effect of spacer, linkage and solid support on the synthesis of oligonucleotides," Tetrahedron 45(9):2777-2792 (1989)	
	306.	Declaration of Stephen P.A. Fodor, in the opposition to EP 0619321, 5 pages (dated October 12, 2000)	
	307.	Declaration of William Bains in the opposition to EP 0619321, includes exhibits, 13 pages (dated October 13, 2000)	
	308.	Declaration of J. Leighton Read, M.D., in the opposition to EP 0619321, 4 pages (dated October 30, 2000)	
	309.	Declaration of Dr. James G. Wetmur, in the opposition to EP 0619321, 9 pages (dated March 5, 2002)	
	310.	Declaration of Professor Lubert Stryer, M.D., in the opposition to EP 0619321, 15 pages (dated March 6, 2002)	
	311.	Ekins et al., "Multianalyte microspot immunoassay. The microanalytical 'compact disk' of the future," Ann. Biol. Clin. 50:337-353 (1992)	
	312.	Ekins et al., "Developing multianalyte assays," TIBTECH 12:89-94 (1994)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 17 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	313.	Ekins et al., "Microspot®, Array-based, Multianalyte Binding Assays: The Ultimate Microanalytical Technology?" in Microspot Immunoassays and DNA Analysis Techniques: Implications and Practical Aspect, Chapter 24, pages 640-646 (1992)	
	314.	Declaration of Stephen Philip Alan Fodor, in the opposition to EP 0619321, 7 pages (dated July 28, 2003)	
	315.	Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 15 pages (dated July 17, 2003)	
	316.	Annex AEGC-1 to the Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 11 pages (July 17, 2003)	
	317.	Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 8 pages (dated July 17, 2003)	
	318.	Annex AEGC-1 to Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 26 pages (July 17, 2003)	
	319.	Annex AEGC-2 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 7 pages (July 17, 2003)	
	320.	Annex AEGC-3 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 3 pages (July 17, 2003)	
	321.	Annex AEGC-4 to the Second Declaration of Professor Anthony Edward George Cass, in the opposition to EP 0619321, 6 pages (July 17, 2003)	
	322.	Anonymous "Dovebid Webcast Auction," Printout of an advertisement for sale by auction on behalf of Protogene, 5 pages (publication date unknown)	
	323.	Southern et al. "Parallel synthesis and analysis of large numbers of related chemical compounds: applications to oligonucleotides," Journal of Biotechnology 35:217-227 (1994)	
	324.	Southern et al., "DNA chips: analyzing sequence by hybridization to oligonucleotides on a large scale," TIG 12(3): 110-115 (1996)	
	325.	Statement of Dr. Paul H. Silverman in the opposition to EP 0619321, 7 pages (dated July 25, 2003)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 18 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	326.	Coassin, Meeting with Affymax Researcher at Human Genome III Poster Presentation, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)		
	327.	Silverman, Affymax and Human Genome III, Oct. 21-23, San Diego, 2 pages, in the opposition to EP 0619321 (submitted July 29, 2003)		
	328.	Declaration of Dennis W. Solas, in U.S. Patent and Trademark Office Interference Proceeding No. 104,359, 9 pages (dated May 28, 1999)		
	329.	OGT v. Affymetrix, Affymetrix' Opening Submissions, HC 1999 02517, HC 1999 04645 (March 22, 2001) 81 pages (submitted July 29, 2003)		
	330.	Chronology of the Patentee's Efforts to Develop Polynucleotide Arrays, in the opposition to EP 0619321, 5 pages (submitted July 29, 2003)		
	331.	Prosecution history of US application 07/362,901, 55 pages, in the opposition to EP 0619321 (submitted July 29, 2003)		
	332.	In the matter of Oxford Gene Technologies v. Affymetrix, Inc., Court transcript of November 8, 2000, 21 pages, in the opposition to EP 0619321, 2 pages (submitted July 29, 2003)		
	333.	Chronology of the Patentee's Efforts to Reduce Region Size, in the opposition to EP 0619321, 6 pages (submitted July 29, 2003)		
	334.	Jacobs et al., "Combinatorial chemistry – applications of light-directed chemical synthesis," TIBTECH 12:19-26 (1994)		
	335.	Gallop et al., "Applications of Combinatorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," J. Med. Chem. 37:1233-1251 (1994)		
	336.	Lipshutz et al., "Advanced DNA sequencing technologies," Current Opinion in Structural Biology 4:376-380 (1994)		
	337.	Wrotnowski, "Biochip Technology Offers Powerful Tool for Research and Diagnostics," 1 page, Genetic Engineering News (1994)		
	338.	McGall et al., "Light-directed synthesis of high-density oligonucleotide arrays using semiconductor photoresists," Proc. Natl. Acad. Sci. USA 93:13555-13560 (1996)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 19 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	339.	Beecher et al., "Chemically Amplified Photolithography for the Fabrication of High Density Oligonucleotide Arrays," Polym. Mater. Sci, Eng. 76: 597-598 (1997)	
	340.	Anderson et al., "Polynucleotide Arrays for Genetic Sequence Analysis," Topics in Current Chemistry 194:117-129 (1997)	
	341.	Lipshutz et al., "High density synthetic oligonucleotide arrays," Nature Genet., suppl. 21:20-24 (1999)	
	342.	Barone et al., "Photolithographic Synthesis of High Density Oligonucleotide Probe Arrays," Nucleosides, Nucleotides & Nucleic Acids 20(4-7):525-531 (2001)	
	343.	Amendment filed with the United States Patent Office during prosecution of application no. 08/466,632, dated September 23, 1996, 8 pages (submitted July 29, 2003)	
	344.	Declaration of Dr. Marc M. Greenberg, in the opposition to EP 0619321, 11 pages (dated July 28, 2003)	
	345.	Curriculum vitae of Marc M. Greenberg, 25 pages (publication date unknown)	
	346.	Venkatesan et al., "Improved Utility of Photolabile Solid Phase Synthesis Supports for the Synthesis of Oligonucleotides Containing 3'-Hydroxyl termini," J. Org. Chem. 61:525-529 (1996)	
	347.	Pirrung et al., "3'-Nitrophenylpropyloxycarbonyl (NPPOC) Protecting Groups for High-Fidelity Automated 5'→3' Photochemical DNA Synthesis," Organic Letters 3(8): 1105-1108 (2001)	
	348.	Beier et al., "Synthesis of Photolabile 5'-O-Phosphoramidites for the Photolithographic Production of Microarrays of inversely Oriented Oligonucleotides," Helvetica Chimica Acta 84:2089-2095 (2001)	
	349.	Wolter et al., "Polymer support oligonucleotide synthesis XX1): Synthesis of a Henhectacosa Deoxynucleotide by use of a dimeric phosphoramidite synthon," Nucleosides & Nucleotides 5(10):65-77 (1986)	
	350.	Sondek et al., "A General Strategy for Random Insertion and Substitution Mutagenesis: Substoichiometric Coupling of Trinucleotide Phosphoramidites," Proc. Natl. Acad. Sci. USA 89(8):3581-3585 (2003)	
	351.	Virnekas et al., "Trinucleotide phosphoramidites: ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis," Nucl. Acids Res. 22:5600-5607 (1994)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	352.	Zehavi et al., "Light-Sensitive Glycosides. II. 2-Nitrobenzyl 6-Deoxy- α -L-mannopyranoside and 2-Nitrobenzyl 6-Deoxy- β -L-galactopyranoside," J. Org. Chem. 37(4):2285-2288 (1972)	
	353.	Usman et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an Escherichia coli Formylmethionine tRNA," J. Am. Chem. Soc. 109:7845-7854 (1987)	
	354.	Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," Nucl. Acids Res. 23(14):2677-2684 (1995)	
	355.	Scaringe et al., "Novel RNA Synthesis Method Using 5'-O-Silyl-2'-O-orthoester Protecting Groups," J. Am. Chem. Soc. 120:11820-11821 (1998)	
	356.	Stipp, "Gene Chip Breakthrough; Microprocessors have reshaped our economy, spawned vast fortunes, and changed the way we live. Gene chips could be even bigger," Fortune, p. 56 -6 page transcript (March 31, 1997)	
	357.	Online European Patent Register – Results, EP 0373203 record printout from July 28, 2003, in the opposition to EP 0619321, 3 pages (submitted July 29, 2003)	
	358.	Declaration of Edwin Mellor Southern, in the opposition to EP 0373203, with exhibits, 22 pages (January 16, 1998)	
	359.	First Confidential Witness Statement of Alan-Philippe Blanchard, in the opposition to EP 0619321, 4 pages (dated January 19, 2001)	
	360.	Expert Report of David Bowen Wallace, P.E., Ph.D., in the opposition to EP 0619321, 59 pages (dated January 18, 2001)	
	361.	Response of Affymetrix Inc. (Opponent VII) to the Patentee's Reply to Opposition to European Patent No. 0 373 203 B, in the opposition to EP 0619321, 50 pages (submitted July 29, 2003)	
	362.	Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metragen, Inc., 24 pages, in the opposition to EP 0619321 (submitted July 29, 2003)	
	363.	Curriculum Vitae of Professor Roger Ekins, FRS., in the opposition to EP 0619321, 2 pages (submitted July 31, 2003)	
	364.	Stoll et al. "Protein Microarray Technology," Frontiers in Bioscience 7:c13-32 (2002)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		Filing Date: October 28, 2003	PAGE 21 of 46 Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	365.	"universal succession," and "universal successor," pp. 1445-1446, Black's Law Dictionary, 7th edition, Garner, Ed., West Group St. Paul, Minnesota, USA (1999), in the opposition to EP 0619321, 3 pages (submitted April 2, 2004)	
	366.	Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metrigen, Inc., 40 pages, in the opposition to EP 0619321 (submitted April 2, 2004)	
	367.	Declaration of Robert J. Molinari, in the opposition to EP 0619321, 8 pages (dated June 16, 2004)	
	368.	Asset Purchase Agreement by and between Protogene Laboratories, Inc. and Metrigen, Inc., 67 pages, in the opposition to EP 0619321 (submitted January 10, 2005)	
	369.	Declaration of Thomas Brennan, in the opposition to EP 0619321, 7 pages (dated January 7, 2005)	
	370.	Declaration of Albert. P. Halluin, in the opposition to EP 0619321, 2 pages (dated January 7, 2005)	
	371.	Declaration of Nathan Hamilton, in the opposition to EP 0619321, 3 pages (dated January 5, 2005)	
	372.	Declaration of Don F. Livornese, in the opposition to EP 0619321, 2 pages (dated January 7, 2005)	
	373.	Declaration of Mark A. Metcalf, in the opposition to EP 0619321, 1 page (dated January 4, 2005)	
	374.	Declaration of Thomas Brennan, in the opposition to EP 0619321, 7 pages (dated January 5, 2005)	
	375.	Broughton, Letter enclosing copy of a Decision of the Opposition Division in relation to European Patent No. 834 575, 34 pages, in the opposition to EP 0619321 (submitted September 6, 2005)	
	376.	McClure, "The Hidden Value of Intangibles," http://www.investopedia.com/printable.asp?a=/articles/03/010603.asp , 2 pages (January 6, 2003)	
	377.	Van Vleet, "Intangible Asset Valuation Issues Under SFAS 142," 8 pages, from http://www.williametteinsights.com/02/intangibleasset.html (January 19, 2006).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 22 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	378.	Declaration of Jeffrey B. Oster, in the opposition to EP 0619321, 3 pages (dated January 19, 2006)	
	379.	Slides which show in diagrammatic and outline form the chemistry and process of array preparation in accordance with the invention, in the opposition to EP 0619321, 6 pages (submitted January 23, 2006)	
	380.	Cama et al., "Total Synthesis of Thienamycin Analogues. 1. Synthesis of the Thienamycin Nucleus and dl-Descysteaminythienamycin," J. Am. Chem. Soc. 100(25):8006-8007 (1978)	
	381.	Second Declaration of Professor John Sutherland, in the opposition to EP 0619321, 1 page (dated January 19, 2006)	
	382.	Second declaration of Robert J. Molinari, in the opposition to EP 0619321, 1 page (dated January 19, 2006)	
	383.	Penner, "Affymetrix – universal Successor / Successor Liability Issues," 5 pages, Memo from Baker & McKenzie LLP, in the opposition to EP 0619321 (submitted January 23, 2006)	
	384.	Entity Details, Protogene Laboratories, Inc., 2 pages, << https://sos-res.state.de.us/tin/controller >>, (printed March 10, 2006)	
	385.	Declaration by Julian Gordon, with curriculum vitae, in the opposition to EP 0834575, 13 pages (dated May 24, 2005)	
	386.	Lee, "Re: Protogene Laboratories, Inc.," Letter from Greenberg Taurig, 2 pages, dated March 22, 2006, in the opposition to EP 0619321 (submitted May 4, 2006)	
	387.	Statement of Thomas Brennan, Ph.D., in the opposition to EP 0619321, 1 page (dated March 22, 2006)	
	388.	Molanari, letter to Vossius and Partners, 1 page, dated March 22, 2006, in the opposition to EP 0619321 (submitted May 4, 2006)	
	389.	Certificate of Dissolution of Protogene Laboratories, Inc., 1 page (dated August 18, 2003)	
	390.	Herring, Letter to Axel Stellbrink, in the opposition to EP 0619321, 4 pages (dated September 13, 2006)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 23 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	391.	Fann, Minutes of a Special Meeting of The Board of Directors of Protogene Laboratories, Inc., in the opposition to EP 0619321, 1 page (dated August 25, 2006)		
	392.	Authorization, form 1003 02.00, in the opposition to EP 0619321, 1 page (dated September 12, 2006)		
	393.	Brennan, Letter to A. Stellbrink, in the opposition to EP 0619321, 1 page (dated September 10, 2006)		
	394.	Statutory Declaration of Dr. Nicholas Vaughan Ashley in the opposition to EP 0373203, 8 pages (dated May 26, 1995)		
	395.	Statutory Declaration of Dr. William Bains in the opposition to EP 0373203, includes exhibits, 19 pages (dated May 24, 1995)		
	396.	Britten-Kelly and Willis, "Michael Additions to Alkyl Substituted Divinyl Ketones," Synthesis 1980:27 (1980)		
	397.	Grounds of Opposition to EP 0619 321 B1, 15 pages, in the opposition to EP 0619321, 3 pages (submitted November 26, 1999)		
	398.	Lockhart et al., "Expression monitoring by hybridization to high-density oligonucleotide arrays," Nature BioTechnology 14:1575-1580 (1996)		
	399.	Biochemistry Poster Session, 50 pages (October 4-7, 1994)		
	400.	Opposition to EP 0728520 by PamGene B.V., 27 pages (filed February 18, 2002)		
	401.	Patentee's response to the opposition, in the opposition to EP 0728520, 17 pages (filed September 30, 2002)		
	402.	Further comments as to lack of novelty, inventive step and sufficiency, in the opposition to EP 0728520, 11 pages (dated November 14, 2003)		
	403.	"Decision revoking the European Patent," in the opposition to EP 0728520, 13 pages (dated January 29, 2004)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 24 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	404.	Patentee's grounds for appeal in the opposition to EP 0728520, 10 pages (dated June 8, 2004)	
	405.	Opponent's response to Patentee's grounds for appeal, in the opposition to EP 0728520, 6 pages (dated December 15, 2004)	
	406.	Bray et al., "Simultaneous Multiple Synthesis of Peptide Amides by the Multipin Method. Applications of Vapor-Phase Ammonolysis," J. Org. Chem. 59:2197-2203 (1994)	
	407.	Bray et al., "Gas phase cleavage of peptides from a solid support with ammonia vapour. Application in simultaneous multiple peptide synthesis," Tetrahedron Letts. 32(43): 6163-6166, abstract only (1991)	
	408.	Hulmes and Pan, "Selective cleavage of polypeptides with trifluoroacetic acid: applications for microsequencing," Anal. Biochem. 197(2):368-376, abstract only (1991)	
	409.	Miyatake et al., "Specific chemical cleavage of asparaginyl and glycyl-glycine bonds in peptides and proteins by anhydrous hydrazine vapor," J. Biochem. 115(2):208-212, abstract only (1994)	
	410.	Zingde et al., "Peptide mapping of proteins in gel bands after partial cleavage with acidic cyanogens bromide vapors," Anal. Biochem. 155(1):10-13, abstract only (1986)	
	411.	Matsueda, "Deprotection of Nin-formyl tryptophan using 1,2-ethanedithiol in liquid hydrogen fluoride," Int. J. Peptide Protein Res. 20:26-34 (1982)	
	412.	Claim requests for opposition proceedings for EP 0373203 Oxford Gene Technology, 3 pages (dated November 13, 2001)	
	413.	CV of van Bueringen, in the opposition to EP 0 728 520 (submitted November 17, 2003)	
	414.	CV of Ruijtenbeek, in the opposition to EP 0 728 520 (submitted November 17, 2003)	
	415.	Goldberg et al., "Screen printing: a technology for the batch fabrication of integrated chemical-sensor arrays," Sensors and Actuators B 21:171-183 (1994)	
	416.	"Summons to attend oral proceedings pursuant to Rule 71(1) EPC," in the opposition to EP 0853679, 10 pages (dated February 14, 2006)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 25 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	417.	"Minutes of the oral proceedings before the Opposition Division," in the opposition to EP 0853679, 17 pages (dated September 12, 2006)	
	418.	Augenlicht et al., "Expression of Cloned Sequences in Biopsies of Human Colonic Tissue and in Colonic Carcinoma Cells Induced to Differentiate in Vitro," Cancer Res. 47:6017-6021 (1987)	
	419.	Dattagupta et al., "Rapid Identification of Microorganisms by Nucleic Acid Hybridization after Labeling the Test Sample, Analytical Biochemistry," Anal. Biochem. 177: 85-89 (1989)	
	420.	McGarrigle/Saliba/Jiminez regarding the public availability of D3 (Lipshutz et al), e-mail correspondence of February 5-6, 2002, 2 pages	
	424.	Date Stamp relating to D3 (Lipshutz et al) from the University of California at Berkeley (cited by patentee)	
	422.	Shultz/Bickel e-mail regarding release date of Biotechniques Vol. 19(3) correspondence of February 2-3, 2005, 2 pages	
	423.	Ogretman et al., "Internal cRNA Standards for Quantitative Northern Analysis," BioTechniques 14(6):935-940 (1993)	
	424.	Kawasaki et al., "Genetic Analysis Using Polymerase Chain Reaction-Amplified DNA and Immobilized Oligonucleotide Probes: Reverse Dot-Blot Typing," Methods in Enzymology 218:369-381 (1993)	
	425.	Declaration of Dianne Olson, 1 page (dated June 15, 2006)	
	426.	Date Stamp relating to D3 (Lipshutz et al) from the Loyola University Health Sciences Library	
	427.	Date Stamp relating to D3 (Lipshutz et al) from the University of Michigan Medical Library	
	428.	Quigley, Fax communication regarding journal issue dates, 1 page, Steenbock Memorial Library, University of Wisconsin-Madison (May 11, 2006)	
	429.	Curriculum Vitae of Thomas Brendan Ryder, 7 pages (publication date unknown)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 26 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	430.	Curriculum Vitae of Philip L. McGarrigle Jr., 2 pages (publication date unknown)	
	431.	Curriculum Vitae of Professor Anthony Edward George Cass, 11 pages (publication date unknown)	
	432.	Opposition to EP 0834576 by Dr. Peter Schneider, 7 pages (dated October 11, 2002)	
	433.	Opposition to EP 0834576 by Roche Diagnostics GmbH, 14 pages (filed October 16, 2002)	
	434.	Opposition to EP 0834576 by Applera Corporation, 20 pages (dated October 14, 2002)	
	435.	Opposition to EP 0834576 by PamGene B.V., 39 pages (dated October 16, 2002)	
	436.	Opposition to EP 0834576 by Combimatrix Corporation, 26 pages (dated October 16, 2002)	
	437.	Opposition to EP 0834576 by Abbott Laboratories, 26 pages (dated October 16, 2002)	
	438.	Response of the Patentee to the oppositions to EP 0834576, 70 pages (dated February 23, 2004)	
	439.	"Summary of Facts and Submissions," and "Preliminary opinion (Rule 71a(1) EPC) and reasons therefore," in the oppositions to EP 0834576, 19 pages (dated July 20, 2004)	
	440.	Abbott Laboratories response to the Summons to Attend Oral Proceedings in the oppositions to EP 0834576, 8 pages (dated December 22, 2004)	
	441.	Applera's written submissions, in the oppositions to EP 0834576, 15 pages (December 20, 2004)	
	442.	Patentee's further observations, in the oppositions to EP 0834576, 3 pages (dated December 22, 2004)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 27 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	443.	Minutes of the oral proceeding, in the oppositions to EP 0834576, 10 pages (dated February 22, 2005)	
	444.	Patentee's arguments made on appeal, in the oppositions to EP 0834576, 9 pages (dated September 27, 2005)	
	445.	Abbott Laboratories response to Patentee's Grounds of Appeal, in the oppositions to EP 0834576, 13 pages (dated February 22, 2006)	
	446.	Combimatrix Corporation's response to Patentee's Grounds of Appeal, in the oppositions to EP 0834576, 12 pages (dated February 22, 2006)	
	447.	Dr. Schneider's response to Patentee's Grounds of Appeal, in the oppositions to EP 0834576, 11 pages (dated February 22, 2006)	
	448.	Smith et al., "The synthesis of oligonucleotides containing an aliphatic amino group at the 5' terminus: synthesis of fluorescent DNA primers for use in DNA sequence analysis," <i>Nucleic Acids Research</i> 13(7):2399-2412 (1985)	
	449.	Skolnick et al., "Simultaneous Analysis of Multiple Polymorphic Loci Using Amplified Sequence Polymorphisms (ASPs)," <i>Genomics</i> 2: 273-279	
	450.	Renz, "Polynucleotide-histone H1 complexes as probes for blot hybridization," <i>EMBO</i> 2(6):817-822 (1983)	
	451.	Order Granting Incyte's Motion for Partial Summary Judgment of invalidity of Claims 4 and 5 of the '992 Patent for lack of Written Description of "Mixture," Denying Affymetrix' Cross-motion with Respect Thereto, and Denying Incyte's Motion for Partial Summary Judgment of invalidity of Claims 4 and 5 of the '992 Patent for indefiniteness, from Affymetrix, Inc. vs. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case No. C-99-21164 JF, 12 pages (filed October 3, 2001)	
	452.	Order Granting Motion for Partial Summary Judgment of invalidity of Claims 1-3 of U.S. Patent No. 5,800,992 for Indefiniteness of "Substantially Complementary," from Affymetrix, Inc. vs. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Case Nos. C-99-21164 JF and C-99-21165 JF, 6 pages (filed September 20, 2001)	
	453.	Payne, Fax communication to H. Kendall regarding available date of Electrophoresis Supercomputing and the Human Genome: 1 st International Conference, 1990, 1 page (dated January 28, 2004)	
	454.	Declaration of Professor John Sutherland, in the matter of EP 0 834 575, 13 pages (dated November 17, 2004)	
	455.	Declaration of Professor Anthony Edward George Cass, in the matter of EP application no. 99202455.4, 25 pages (undated)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 28 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	456.	"array," in The Concise Oxford Dictionary of Current English, Allen et al., Eds., Clarendon Press, Oxford, page 59 (1990)	
	457.	Erlich and Bugawan, "Chapter 16. HLA Class II Gene Polymorphism: DNA Typing, Evolution, and relationship to Disease Susceptibility," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 193-204 (1989)	
	458.	Kazazlan, "Chapter 14. Use of PCR in the Diagnosis of Monogenic Disease," in PCR Technology, Principles and Applications for DNA Amplification, Erlich, Ed., Stockton Press, New York, New York, pp. 153-169 (1989)	
	459.	Interlocutory decision in Opposition proceedings, from the Opposition to EP 0834575, 39 pages (dated January 24, 2005)	
	460.	"Judgment Pursuant to Remand from United States District Court" in Interference No. 104,358, 7 pages (mailed March 17, 2003)	
	461.	Declaration of Ward in US 08/514,875, 28 pages (dated October 26, 1998)	
	462.	Declaration of Kricka in US 08/514,875, 9 pages (dated October 26, 1998)	
	463.	Sambrook et al., "Analysis of RNA," in Molecular Cloning, A Laboratory Manual, Second Edition, Smabrook et al., Eds., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, USA, pp. 7.37-7.39 and 7.84 (1989)	
	464.	Alwine et al., "Method for detection of specific RNAs in agarose gels by transfer to diazobenzylloxymethyl-paper and hybridization with DNA probes," Proc. Natl. Acad. Sci. USA 74:5350-5354 (1977)	
	465.	Alwine et al., "Detection of Specific RNAs or Specific Fragments of DNA by Fractionation in Gels and Transfer to Diazobenzylloxymethyl Paper," Meth. Enzymol. 68: 220-242 (1979)	
	466.	"Declaration of Dennis W. Solas," in Patent Interference 104,358, 10 pages, (dated May 28, 1999)	
	467.	Schulhof et al., "The final deprotection step in oligonucleotide synthesis is reduced to a mild and rapid ammonia treatment by using labile base-protecting groups," Nucl. Acids Res. 15:397-416 (1987)	
	468.	"Complaint for patent infringement," in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Civil Action No. 98-520, 7 pages, (dated September 1, 1998)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	PAGE 29 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	469.	"Brief in Support of Plaintiff Affymetrix' Motion for Preliminary Injunction," in Affymetrix, Inc. v. Synteni, Inc. and Incyte Pharmaceuticals, Inc., Civil Action No. 98-520, 44 pages (dated April 15, 1999)	
	470.	"Deposition of Sir Walter Bodmer in Patent Interference 104,358, 192 pages (dated July 30, 1999)	
	471.	"Deposition of Larry Kricka," in Patent Interference No. 104,358, 154 pages (dated May 20, 1999)	
	472.	"Deposition of William C. Lacourse," in Patent Interference No. 104,359, 22 pages (dated June 18, 1999)	
	473.	"Deposition of Gail Stygall, Ph.D.," in Patent Interference No. 104,359, 31 pages (dated June 17, 1999)	
	474.	"Deposition of Dennis W. Solas, Ph.D.," in Patent Interference No. 104,359, 130 pages (dated June 16, 1999)	
	475.	"Deposition of Martin J. Goldberg, Ph.D.," in Patent Interference No. 104,359, 51 pages (dated June 16, 1999)	
	476.	"Declaration of Teresa M. Corbin," in Patent Interference 104,358, 8 pages (dated June 15, 1999)	
	477.	"Oligonucleotide" pp. 349-350 in McGraw-Hill Encyclopedia of Science & Technology, 6th Edition, McGraw-Hill Book Company, New York, New York (1987)	
	478.	"Declaration of Professor Lubert Stryer, M.D.," in European Patent No. 0 373 203 of Isis Limited and Opposition thereto by Affymetrix, 9 pages (dated January 28, 1997)	
	479.	Parmalee and Kelber, "Memo to Judge Torczon re Conference Calls in Interference Nos. 104,358 and 104,359, dated June 16, 1999	
	480.	"Brown Submission under 37 C.F.R. § 1.666(b)," 25 pages (dated December 19, 2002)	
	481.	"Judgement Pursuant to Remand from Unites State District Court," 4 pages (dated March 17, 2003)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 30 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	482.	Declaration of Charles L. Gholz, in U.S. Interference No. 104,359, 5 pages (dated November 22, 1995)		
	483.	Declaration of Kricka, in U.S. Interference No. 104,359, 13 pages (dated December 3, 1998)		
	484.	Declaration of Kelber, in U.S. Interference No. 104,359, 2 pages (dated December 3, 1998)		
	485.	Declaration of William C. LaCourse, in U.S. Interference No. 104,359, 14 pages (dated May 25, 1999)		
	486.	Declaration of Dr. Gail Stygall, in U.S. Interference No. 104,359, 21 pages (dated May 24, 1999)		
	487.	Declaration of Sir Walter Bodmer, in U.S. Interference No. 104,359, 10 pages (dated May 27, 1999)		
	488.	Declaration of Dennis W. Solas, in U.S. Interference No. 104,359, 9 pages (dated May 28, 1999)		
	489.	Declaration of Martin Goldberg, in U.S. Interference No. 104,359, 4 pages (dated May 26, 1999)		
	490.	Declaration of Teresa M. Corbin, in U.S. Interference No. 104,359, 3 pages (dated June 15, 1999)		
	491.	Deposition of Larry Kricka, in U.S. Interference No. 104,359, 52 pages (dated May 20, 1999)		
	492.	Deposition of William C. LaCourse, Ph.D., in U.S. Interference No. 104,359, 22 pages (dated June 24, 1999)		
	493.	"Drmanac list of intended motions," in Patent Interference No. 104,552, 4 pages (dated March 20, 2001)		
	494.	"Judgment pursuant to 37 C.F.R. § 1.662," in the Patent Interference No. 104,658, 2 pages (dated December 14, 2001)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 31 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	495.	"Judgment pursuant to C.F.R. § 1.662(a)," in the Patent Interference No. 105,089, 3 pages (undated)		
	496.	Matsuzawa et al., "Containment and growth of neuroblastoma cells on chemically patterned substrates," <i>Journal of Neuroscience Methods</i> 50:253-260 (1993)		
	497.	Chrisey et al., "Selective Attachment of Synthetic DNA to Self-assembled-monolayer Functionalized Surfaces," <i>Mat. Res. Soc. Symp. Proc.</i> 330:179-184 (Symposium held Nov. 29 - Dec. 3, 1993)		
	498.	Guo et al., "Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports," <i>Nucl. Acids Res.</i> 22(24):5456-5465 (1994)		
	499.	Eggers et al., "A Microchip for Quantitative Detection of Molecules Utilizing Luminescent and Radioisotope Reporter Groups," <i>BioTechniques</i> 17(3):516-524 (1994)		
	500.	Amendment, from File History of U.S. Patent No. 5,922,534, Paper No. 4, 9 pages (dated February 11, 1997)		
	501.	Office Action, from File History of U.S. Patent No. 5,922,534, Paper No. 5, 6 pages (dated May 13, 1997)		
	502.	Amendment 37 C.F.R. 1.116, from File History of U.S. Patent No. 5,922,534, Paper No. 6, 7 pages (dated July 14, 1997)		
	503.	Response to Office Action, from File History of U.S. Patent No. 5,922,534, Paper No. 11, 4 pages (dated October 27, 1997)		
	504.	Amendment Under 37 CFR 1.116, from File History of U.S. Patent No. 5,922,534, Paper No. 14, 5 pages (dated March 13, 1998)		
	505.	Resume, William C. LaCourse, 8 pages (undated)		
	506.	Curriculum Vitae of James G. Wetmur, 7 pages (dated June 22, 2003)		
	507.	Letter from Lauren Stevens to Deborah Neville, Esq. of Hewlett-Packard Company (with the Table of Contents of Volumes I and 11 attached, but without volumes I and II), 5 pages (dated July 19, 1994)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i> PAGE 32 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	508.	Letter from Lauren Stevens to Deborah Neville, Esq. of Hewlett-Packard Company (with the Table of Contents for the Patent Publications attached, but without the referenced binder attached), 3 pages (dated July 20, 1994)	
	509.	Letter from Lauren Stevens to Deborah Neville of Hewlett-Packard Company regarding Affymetrix Technology License Agreement, 2 pages (dated July 21, 1994)	
	510.	Facsimile letter from Lauren Stevens to Deborah Neville of Hewlett-Packard Company, 1 page (dated July 26, 1994)	
	511.	Memo from Lauren Stevens to Affymax "Hewlett-Packard File" regarding "due diligence" (without attachment), 1 page (dated August 4, 1994)	
	512.	Wetmur et al., "Light-Directed, Spatially Addressable Parallel Chemical Synthesis," Chemtracts – Biochem. Mol. Biol. 2:207-10 (1991)	
	513.	Stryer, L., "Restriction Fragments can be Separated by Gel Electrophoresis and Visualized," from Biochemistry, Third Edition, published by W.H. Freeman & Co., pp. 119 (1988)	
	514.	List of Affymetrix internal file numbers, 8 pages (undated)	
	516.	Affymetrix Patent Portfolio – Overview, 10 pages (undated)	
	516.	Declaration of James G. Wetmur, in U.S. Interference No. 105,089, 16 pages (dated June 25, 2003)	
	517.	Declaration of William C. LaCourse, in U.S. Interference No. 105,089, 13 pages (dated June 26, 2003)	
	517.	Declaration of Vernon A Norviel, in U.S. Interference No. 105,089, 6 pages (dated June 27, 2003)	
	510.	Declaration of Lauren Stevens, in U.S. Interference No. 105,089, 7 pages (dated June 26, 2003)	
	520.	Office action, from U.S. Application No 08/412,498, 8 pages, (dated October 7, 1996)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	PAGE 33 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	521.	Office action, from U.S. Application No. 08/412,498, 4 pages (dated September 3, 1997)	
	522.	Office action, from U.S. Application No. 08/412,498, 5 pages (dated January 21, 1998)	
	523.	Office action, from U.S. Application No. 09/337,710, 5 pages (dated October 3, 2000)	
	524.	Declaration of Power of Attorney for Patent Application, from U.S. Application No. 08/412,498, 1 page (dated March 28, 1995)	
	525.	Notice of Appeal, from File History of U.S. Patent No. 5,922,534, Paper No. 7, 1 page (dated August 4, 1997)	
	526.	Associate Power of Attorney, from US. Application No. 09/337,710, 1 page (dated June 21, 1999)	
	527.	Appointment of Associate Attorney/Agent 37 CFR 1.34(b), from U.S. Application No. 08/412,498, 2 pages (dated August 4, 1997)	
	528.	Letter from Renee Lamantia to Norviel, 1 page (dated July 22, 1994)	
	529.	Facsimile letter from Peter Dehlinger to Norviel regarding Affymetrix technology, 2 pages (dated August 23, 1994)	
	530.	Letter dated October 26, 1994, from Norviel to Neville.	
	531.	Letter from Wendy Choi to Norviel regarding review of the Affymetrix patent portfolio by Hewlett-Packard, 1 page (dated August 7, 1997)	
	532.	Letter from Roberta L. Robins to Norviel regarding review of the Affymetrix patent portfolio by Hewlett-Packard, 1 page (dated August 19, 1997)	
	533.	Summary of References Provided to Hewlett-Packard, 4 page (undated)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 34 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	534.	Facsimile from Affymetrix to Ed Wong and Deborah Neville attaching Affmetrix Patent Portfolio – Overview, 12 pages (dated November 11, 1994)	
	535.	Table of references cited by Gordon Stewart, 27 pages (undated)	
	536.	Agilent Technologies to Expand its Life Science Market Presence with Introduction of New DNA Micro-Array Program, Press Releases, 2 pages (December 14, 1999)	
	537.	Affymetrix Patent Specification 09/614,068, 199 pages, filed July 11, 2000	
	538.	Webster's II New College Dictionary, Houghton Mifflin Company, Boston, Mass. USA, p. 787 (1995)	
	539.	Davis et al., "Making Synthetic mDNA Probes: General Description," in Basic Methods in Molecular Biology, Elsevier, New York, New York USA, p. 68. (1986).	
	540.	Gait, Oligonucleotide Synthesis, A Practical Approach, IRL Press, Oxford, England, 235 pages (1984)	
	541.	"Evaporation," in Encyclopedia of Chemistry (4th ed.), Van Nostrand Reinhold Company, New York, New York, USA, p. 366 (1984)	
	542.	"Chemistry for Automated DNA/RNA Synthesis," Section 6 in Models 392 and 394 DNA/RNA Syntehsizer manual, pp. 6-1 – 6-36, Applied Biosystems (1991)	
	543.	Office Action, Paper 5, Application 08/412,498, 6 pages (dated May 13, 1997)	
	544.	Declaration of Henri M. Sasmor, in US. Interference No. 105,089, 1 5pages (dated June 27, 2003)	
	545.	Davis et al., in Basic Methods in Molecular Biology, Elsevier Science Publishing Co., Inc., New York, New York, USA, pp.62-65 and 75-78 (1986)	
	546.	CV of Henri M. Sasmor, 2 pages (undated)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 35 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	547.	Maniatis et al., in MOLECULAR CLONING; A LABORATORY MANUAL, Cold Spring Harbor Press, pp. 313-315 and 326-328 (1982).	
	548.	Kessler, "Nonradioactive Labeling Methods for Nucleic Acids," Chapter 2 in Nonisotopic DNA Probe Techniques, edited by Larry Kricka, Academic Press, Inc., Sandiego, California, USA, pp. 29-92 (1991).	
	549.	Dyson, "Immobilization of Nucleic Acids and Hybridization Analysis," Chapter 5 in Essential Molecular Biology Volume II: A Practical Approach, edited by T.A. Brown, IRL Press, Oxford, England, pp. 111-156 (1991).	
	550.	Preliminary Amendment and Request for Interference Under 37 CFR 607, Paper 2 to Application Ser. No. 09/614,068 14 pages, (dated September 6, 2000)	
	551.	Supplemental Amendment, Paper 14, to Application Serial No. 09/614,068, 10 pages (dated April 12, 2002)	
	552.	Declaration of Scott M. K. Lee, in US Interference No. 105,089, 5 pages (dated August 20, 2003)	
	553.	Declaration of Salvatore J. Arrigo, in US Interference No. 105,089, 5 pages (dated August 20, 2003)	
	554.	Declaration of Richard W. Evans, in US Interference No. 105,089, 4 pages (dated August 20, 2003)	
	555.	Kriener, "Rapid genetic sequence analysis using a DNA probe array system," American Laboratory, pages 39-43 (March 1996).	
	556.	Abdian, "The bees' knees in bar code," ID Systems 8(8):21-26 (1988).	
	557.	Absalon et al., "Bleomycin mediated degradation of DNA-RNA hybrids does not involve C-1' chemistry," Nucl. Acids Res. 20:4179-4185 (1992).	
	558.	Adams et al., "Pentafluorobenzoylation of O4-Ethylthymidine and Analogues by Phase-Transfer Catalysis for Determination by Gas Chromatography with Electron Capture Detection," Anal. Chem. 58:345-348 (1986).	
	559.	Agard et al., "Quantitative Analysis of Electrophoretograms: A Mathematical Approach to Super-Resolution," Anal. Biochem. 111:257-268 (1981).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	560.	Arndt-Jovin et al., "Immunofluorescence Localization of Z-DNA in Chromosomes: Quantitation by Scanning Microphotometry and Computer-assisted Image Analysis," J. Cell. Biol. 101:1422-1433 (1985).	
	561.	Bailey, "Health Care Bar Codes: Descriptors or Identifiers?" Bar Code News, pp. 42-44 (March/April 1985).	
	562.	Bailey, "Upgrading Blood Banks: Checking Out The Library," Bar Code News, pp. 20-24 (March/April 1983).	
	563.	Advertisement, "Data Entry Station," Bar Code News., p. 55 (Sept/Oct 1983).	
	564.	Barrows et al., "Measurement of fluorescence using digital integration of video images," J. Histochem. Cytochem. 32:741-746 (1984).	
	565.	Anonymous, "Bars in the Lab: Two New Technologies Join Forces," Bar Code News, pp. 6-12 (March/April 1983)	
	566.	Bauman et al, "A new method for fluorescence microscopical localization of specific DNA sequences by in situ hybridization of fluorochrome-labelled RNA.," Exp. Cell Res. 128:485-490 (1980).	
	567.	Beattie et al., "REVIEW: Gene Synthesis Technology: Recent Developments and Future Prospects," Biotechnology and Applied Biochemistry 10:510-521 (1988).	
	568.	Binnig and Rohrer, "The Scanning Tunneling Microscope: A new kind of microscope reveals the structures of surfaces atom by atom. The instrument's versatility may extend to investigators in the fields of physics, chemistry and biology," Sci. Am. 253:50-56 (1985).	
	569.	Blond-Elguindi et al, "Affinity panning of a library of peptides displayed on bacteriophages reveals the binding specificity of BiP," Cell 75:717-728 (1993).	
	570.	Blouke et al., "800x800 charge-coupled device image sensor," Optical Engineering 22:607-614 (1983).	
	571.	Böhmer et al., "Flow-Cytometric Determination of Fluorescence Ratios between Differently Stained Particles Is Dependent on Excitation Intensity," J. Histochem. Cytochem. 33:974-976 (1985).	
	572.	Botstein et al., "Construction of a Genetic Linkage Map in Man Using Restriction Fragment Length Polymorphisms," Am. J. Hum. Genet. 32:314-331 (1980).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 37 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	573.	Bright and Taylor, "Imaging at Low Light Level in Fluorescence Microscopy," in Applications of fluorescence in the biomedical sciences, Eds Taylor et al., New York, New York, AR Liss, pp. 257-288 (1986).	
	574.	Britten, "Complementary Strand Association Between Nucleic Acids and Nucleic Acid Gels," Science 142:963-965 (1963).	
	575.	Chen et al., "A Homogeneous, Ligase-Mediated, DNA Diagnostic Test," Genome Res. 549-556 (1998).	
	576.	Cho et al., "An Unnatural Biopolymer," Science 261:303-305 (1993).	
	577.	Cimino et al., "Psoralens as photoactive probes of nucleic acid structure and function: organic chemistry, photochemistry, and biochemistry," Ann. Rev. Biochem. 54:1151-1193 (1985).	
	578.	Connor, "Digital imaging of free calcium changes and of spatial gradients in growing processes in single, mammalian central nervous system cells," Proc. Natl. Acad. Sci. USA 83:6179-6183 (1986).	
	579.	Cramer and Köster, "Synthese von Oligonucleotiden an einem polymeren Träger," Angew Chem. 80:488-489 (1968).	
	580.	Damha et al., "An improved procedure for derivatization of controlled-pore glass beads for solid-phase oligonucleotide synthesis," Nucl. Acid Res. 18:3813-3821 (1990).	
	581.	Drmanac et al., "Towards Genomic DNA Sequencing Chip Based on Oligonucleotide Hybridization," Abstracts of the Cold Spring Harbor Laboratory Genome Mapping and Sequencing Conference, p. 53 (May 1990).	
	582.	Duester et al., "Molecular cloning and characterization of a cDNA for the β subunit of human alcohol dehydrogenase," Proc. Natl. Acad. Sci. USA 81:4055-4059 (1984).	
	583.	Emlen et al., "A new ELISA for the detection of double-stranded DNA antibodies," J. Immunol. Methods 132:91-101 (1990).	
	584.	Feinberg et al., "A Technique for Radiolabeling DNA Restriction Endonuclease Fragments to High Specific Activity," Anal. Biochem. 132:266-267 (Addendum). 1984	
	585.	Fluke, "Prescription For Hospital Fixed Assets Management," Bar Code News pp. 6-8 (July/August 1984).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 38 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	586.	Gallop et al., "Applications of Combinatorial Technologies to Drug Discovery. 1. Background and Peptide Combinatorial Libraries," J. Med. Chem. 37:1233-1251 (1994).	
	587.	Gilham , "Immobilized Polynucleotides and Nucleic Acids," Adv. Exp. Med. Biol. 42:173-185 (1974).	
	588.	Glazer et al., "A stable double-stranded DNA-ethidium homodimer complex: Application to picogram fluorescence detection of DNA in agarose gels," Proc. Natl. Acad. Sci. USA 87:3851-3855 (1990).	
	589.	Gordon et al., "Applications of Combinatorial Technologies to Drug Discovery. 2. Combinatorial Organic Synthesis, Library Screening Strategies, and Future Directions," J. Med. Chem. 37:1385-1401 (1994).	
	590.	Gress et al., "Hybridization fingerprinting of high-density cDNA-library arrays with cDNA pools derived from whole tissues," Mammalian Genome 3:609-619 (1992).	
	591.	Gundersen et al., "Magnetic bead antigen capture enzyme-linked immunoassay in microtitre trays for rapid detection of schistosomal circulating anodic antigen," J. Immunol. Methods 148:1-8 (1992).	
	592.	Haralambidis et al., "Preparation of base-modified nucleosides suitable for non-radioactive label attachment and their incorporation into synthetic oligodeoxyribonucleotides," Nucl. Acids Res. 15:4857-4876 (1987).	
	593.	Harmon, "Health Industry Bar Code (HIBC) Task Force Publishes Final Recommendations," Bar Code News p. 11 (Nov/Dec 1983).	
	594.	Harmon , "Health Industry Moves Quickly to Adopt Uniform Bar Coding," Bar Code News pp. 20-22 (Sept/Oct 1983).	
	595.	Harmon, "New Standards: Bar Code Markings For Healthcare," Bar Code News pp. 10-14 (July/August 1984).	
	596.	Heidmann and Köster, "Polymer Support Oligonucleotide Synthesis, 11: Use of a Novel Hydrophilic Bead Polymer as Carrier," Makromolekulare Chemie 181:2495-2506 (1980).	
	597.	Hiraoka et al., "The NDA3 Gene of Fission Yeast Encodes β -Tubulin: A Cold-Sensitive <i>nda3</i> Mutation Reversibly Blocks Spindle Formation and Chromosome Movement in Mitosis," Cell 39:349-358 (1984).	
	598.	Hiraoka et al., "The Use of Charge-Coupled Device for Quantitative Optical Microscopy of Biological Structures," Science 238:36-41 (1987).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 39 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	599.	Inouye and Hondo, "Microplate Hybridization of Amplified Viral DNA Segment," J. Clin. Microbiol. 28:1469-1472 (1990).	
	600.	Jablonski and DeLuca, "Immobilization of bacterial luciferase and FMN reductase on glass rods," Proc. Natl. Acad. Sci. USA 73:3848-3851 (1976).	
	601.	Jacobs and Fodor, "Combinatorial chemistry - applications of light-directed chemical synthesis," TIBTECH 12:19-26 (1994).	
	602.	Jeffreys et al., "Amplification of human minisatellites by the polymerase chain reaction: towards DNA fingerprinting of single cells," Nucl. Acids Res. 16:10953-10971 (1988).	
	603.	Kanehisa, "Use of statistical criteria for screening potential homologies in nucleic acid sequences," Nucl. Acids Res. 12:203-213 (1984).	
	604.	Karlin et al., "Efficient algorithms for molecular sequence analysis," Proc. Natl. Acad. Sci. USA 85:841-845 (1988).	
	605.	Khorana et al., "A New Approach to the Synthesis of Polynucleotides," Chemistry and Industry p. 1523 (1956).	
	606.	Köster and Geussenhainer, "A Novel Carrier for Solid Phase Synthesis of Oligomers," Angew. Chem. Internat. Edit. 11(8):713-714 (1972).	
	607.	Köster, "Polymer Support Oligonucleotide Synthesis VII-5: Use of Inorganic Carriers," Tetrahedron Letters 16:1527-1530 (1972).	
	608.	Köster, "Synthesis of a Structural Gene Coding for the Peptide Hormone Angiotensin II, Part 3: Synthesis of the Fragments d(T-T-T-T-A-A), d(A-T-A-T-C-A-TC-C-C) and d(T-T-A-A-A-A-G-G-A-T). Liebigs Ann. Chem. pp. 894-925 (1978).	
	609.	Kwoh et al., "Transcription-based amplification system and detection of amplified human immunodeficiency virus type 1 with a bead-based sandwich hybridization format," Proc. Natl. Acad. Sci. USA 86:1173-1177 (1989).	
	610.	Landegren et al., "A Ligase-Mediated Gene Detection Technique," Science 241:1077-1080 (1988).	
	611.	Lee et al., "Interaction of psoralen-derivatized oligodeoxyribonucleoside methylphosphonates with synthetic DNA containing a promoter for T7 RNA polymerase," Nucl. Acids Res. 16:10681-10697 (1988).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 40 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	612.	Lipman and Pearson, "Rapid and Sensitive Protein Similarity Searches," Science 227:1435-1441 (1985).	
	613.	Lund et al., "Assessment of methods for covalent binding of nucleic acids to magnetic beads, Dynabeads™, and the characteristics of bound nucleic acids in hybridization reactions," Nucl. Acid Res. 16(22):10861-10880 (1988).	
	614.	Lundwall et al., "Isolation and Sequence Analysis of a cDNA Clone Encoding the Fifth Complement Component," J. Biol. Chem. 260:2108-2112 (1985).	
	615.	Maiolini et al., "Study of an Enzyme Immunoassay Kit for Carcinoembryonic Antigen," Clin. Chem. 26:1718-1722 (1980).	
	616.	Mathies et al., "High-sensitivity Single-molecule Fluorescence Detection," SPIE 1205:52-59 (1990).	
	617.	Mathies et al., "Optimization of High-Sensitivity Fluorescence Detection," Anal. Chem. 62:1786-1791 (1990).	
	618.	Matteo, Jr., "How To Cure Medical Supply Chaos," Bar Code News pp. 16-18 (July/August 1984).	
	619.	Merrifield, "Solid Phase Synthesis," Science 232:341-347 (1986).	
	620.	Michael et al., "Randomly Ordered Addressable High-Density Optical Sensor Arrays," Anal. Chem. 70:1242-1248 (1998).	
	621.	Nelson, "The Universal Product Code," Helmers Publishing, p. 55-85 (1997).	
	622.	Nguyen et al., "Detection of Single Molecules of Phycoerythrin in Hydrodynamically Focused Flows by Laser-Induced Fluorescence," Anal. Chem. 59:2158-2161 (1987).	
	623.	Parsons, "Yearly Review: Psoralen Photochemistry," Photochem. Photobiol. 32:813-821 (1980).	
	624.	Pevzner et al., "Optimal Chips for Megabase DNA Sequencing," Mol. Biol. 25: 459-467 (1991).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 41 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	625.	Phimister, "Going global," Nature Genet. 21:1 (1999).	
	626.	Ploem, "New Instrumentation for Sensitive Image Analysis of Fluorescence in Cells and Tissues," in Applications of fluorescence in the biomedical sciences, Eds. Taylor et al., New York, New York, AR Liss, pp. 289-300 (1986).	
	627.	Pon et al., "Derivatization of Controlled-Pore Glass Beads for Solid-Phase Oligonucleotide Synthesis," Biotechniques 6:768-765 (1988).	
	628.	Rocks and Riley, "Automatic analysers in clinical biochemistry," Clin. Phys. Physiol. Meas. 7:1-29 (1986).	
	629.	Rosenthal, "Bush Encounters the Supermarket, Amazed," NY Times pp. A1 and A19 (Feb. 5, 1992).	
	630.	Rost, "Scanning, video intensification and image processing," and in Quantitative fluorescence microscopy, Cambridge: Cambridge University Press, Chapter 15, pp. 162-178 (1991).	
	631.	Rozsnyai et al., "Photolithographic Immobilization of Biopolymers on Solid Supports," Angew. Chem. internat. Edit. 31(6):759-761 (1992).	
	632.	Rye et al., "High-sensitivity two-color detection of double-stranded DNA with a confocal fluorescence gel scanner using ethidium homodimer and thiazole orange," Nucl. Acids Res. 19:327-333 (1990).	
	633.	Saiki et al., "Primer-Directed Enzymatic Amplification of DNA with a Thermostable DNA Polymerase," Science 239:487-491 (1988).	
	634.	Scillian et al., "Early Detection of Antibodies Against rDNA-Produced HIV Proteins with a Flow Cytometric Assay," J. Blood 73:2041-2048 (1998).	
	635.	Shack et al., "Design for a Fast Fluorescent Laser Scanning Microscope," Anal. Quant. Cytol. Histol. 9:509-520 (1987).	
	636.	Shitara et al., "Advantage of Cocktail-Use of Two Anti-tumor Monoclonal Antibodies, KM-93 and KM-231, in Serum Diagnosis of Cancer," Anticancer Res. 9:999-1004 (1989).	
	637.	Skolnick and Wallace, "Simultaneous Analysis of Multiple Polymorphic Loci Using Amplified Sequence Polymorphisms (ASPs)," Genomics 2:273-279 (1988).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	PAGE 42 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	638.	Smith et al., "The synthesis of oligonucleotides containing an aliphatic amino group at the 5' terminus: synthesis of fluorescent DNA primers for use in DNA sequence analysis," Nucl. Acids Res. 13:2399-2412 (1985).	
	639.	Smith, "Bar Code: The Data Entry Alternative," Bar Code News pp. 1-2 (March 1982).	
	640.	Smith et al., "High Throughput DNA Sequencing Using an Automated Electrophoresis Analysis System and a Novel Sequence Assembly Program," Biotechniques 14:1014-1018 (1993).	
	641.	Smith and Hood, "Mapping and Sequencing the Human Genome: How to Proceed," Bio/Technology 5:674-679 (1987).	
	642.	Song et al., "Review Article: Photochemistry and Photobiology of Psoralens," Photochem. Photobiol. 29:1177-1197 (1979).	
	643.	Stanley R., "Help Needed at Central Supply, STAT: Bar Codes Ease Growing Pains," Bar Code News pp. 2-4 (March/April 1983).	
	644.	Anonymous, "Sterile Bar Codes: Guiding Production for a Medical Manufacturer," Bar Code News pp. 14-18 (March/April 1983).	
	645.	Streefkerk et al., "Antigen-Coupled Beads Adherent to Slides: A Simplified Method for Immunological Studies," J. Immunol. Methods 8:251-256 (1975).	
	646.	Streefkerk et al., "Principle of a Reaction for Simultaneous Detection of Various Antibodies Using Coloured Antigen-Coupled Agarose Beads," in Protides of the Biological Fluids, Peeters, Ed., Pergamon Press, Oxford pp. 811-814 (1976).	
	647.	Tobe et al., "Single-well genotyping of diallelic sequence variations by a two-color ELISA-based oligonucleotide ligation assay," Nucl. Acids Res. 3728-3732 (1996).	
	648.	Toda et al., "Sequential alterations in the nuclear chromatin region during mitosis of the fission yeast Schizosaccharomyces pombe: video fluorescence microscopy of synchronously growing wild-type and cold-sensitive cdc mutants by using a DNA-binding fluorescent probe," J. Cell Sci. 52:271-287 (1981).	
	649.	Umesono et al., "Visualization of Chromosomes in Mitotically Arrested Cells of the Fission Yeast Schizosaccharomyces pombe," Current Genetics 7:123-128 (1983).	
	650.	Vignali, "Multiplexed particle-based flow cytometric assays," J. Immunol. Meth. 243:243-255 (2000).	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 43 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	651.	Wahlberg et al., "Rapid detection and sequencing of specific in vitro amplified DNA sequences using solid phase methods," Molecular and Cellular Probes 4:285-297 (1990).	
	652.	Wallace et al., "The use of synthetic oligonucleotides as hybridization probes - II. hybridization of oligonucleotides of mixed sequence to rabbit B-globin DNA," Nucl. Acids Res. 9:879-894 (1981).	
	653.	Wang and Grayston, "Immunologic Relationship Between Genital Tric, Lympho-Granuloma Venereum, and Related Organisms in a New Microtiter Indirect Immunofluorescence Test," Am. J. Ophthalmology 70:367-374 (1970).	
	654.	White et al., "An Evaluation of Confocal Versus Conventional Imaging of Biological Structures by Fluorescence Light Microscopy," J. Cell Biol. 105:41-48 (1987).	
	655.	Ohtsuka et al., "A new method for 3'-labelling of polyribonucleotides by phosphorylation with RNA ligase and its application to the 3'-modification for joining reactions," Nucl. Acids Res. 6:443-454 (1979).	
	656.	Uchida, "Synthesis of oligoribonucleotide (2). The synthesis and uses of trimer units having blocking groups at 3'- and 5' ends," Nuc. Acids Res. Symp. 10:187-188 (1981).	
	657.	Beier and Hoheisel, "Production by quantitative photolithographic synthesis of individually quality checked DNA micorarrays," Nucl. Acids Res. 28(4):e11: 6 pages (2000).	
	658.	Gao et al., "High density peptide microarrays. In situ synthesis and applications," Molecular Diversity, 8:177-187 (2004).	
	659.	Thompson, "An Introduction to Lithography," Chapter 1, in <i>Introduction to Microlithography Theory, Materials, and Processing</i> , Thompson et al., Eds. American Chemical Society, Washington, D.C., pp. 1-13 and table of contents (1983).	
	660.	Thompson, "An Introduction to Lithography," Chapter 1, in <i>Introduction to Microlithography Theory, Materials, and Processing</i> , Thompson et al., Eds. American Chemical Society, Washington, D.C., pp. 1-17 and table of contents (1994).	
	661.	"Decision," 12 pages, from US patent interference no. 104,358 (mailed September 10, 1999)	
	662.	"Decision," 13 pages, from US patent interference no. 104,359 (mailed September 10, 1999)	
	663.	Adams M. Automated DNA Sequencing and Analysis, Academic Press, 1994	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 44 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	664.	Abstracts of papers presented at 1988 meeting on Genome Mapping and Sequencing. Cold Spring Harbor Laboratory, April 27-May 1, 1988 (IAFP 640211-329)	
	665.	Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing. Cold Spring Harbor Laboratory (IAFP 12968-12969)	
	666.	Cold Spring Harbor Laboratory. Abstracts of papers presented at the 1990 meeting on Genome Mapping and Sequencing, May 2-6, 1990 (IAFP 598193-326)	
	667.	Department of Energy, Sequencing of DNA by Hybridization with Oligonucleotides Matrix (SHOM) 1992 (DOE 832-839)	
	668.	Diagram of Format 3 Combinatorial Chip (IAFP 643752)	
	669.	DOE/NIH Human Genome Contractors/Grantee Workshop (Santa Fe, NM) Abstracts Nov. 3-4, 1989 (IAFP 597958-598013)	
	670.	DOE/NIH Human Genome Contractors/Grantee Workshop (Santa Fe, NM) Speaker Abstracts Nov. 3-4, 1989 (IAFP 597926-957)	
	671.	Drmanac et al., "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization: Modelling and Computer Methods In Molecular Biology and Genetics. Abstracts of the Int'l Conference, Novosibirsk, U.S.S.R. 1990: (IAFP 598068-70)	
	672.	Drmanac R, Crkvenjakov R. Prospects for Miniaturized, Simplified and Frugal Human Genome Project: The 'Sequencing Chip' Concept. Belgrade, Yugoslavia Oct. 1989 (IAFP 598743-52)	
	673.	Drmanac R, Crkvenjakov R. Prospects for Miniaturized, Simplified and Frugal Human Genome Project. Genetic Engineering Center, Belgrade, Yugoslavia March 31, 1989 (DOE 520-546)	
	674.	Drmanac R. Miniaturization of Sequencing by Hybridization. The Sequencing Chip Concept Poster Presentation 1989 (IAFP 598099-117)	
	675.	Drmanac, R. Sequencing by Hybridization (SBH) on Super Chips. Presentation at BioChip Array Technologies: Fabrication and Applications, May 10, 1995 (IAFP 643753-643771)	
	676.	Harmon et al. Reading Between the Lines. North American Technology, Inc. 1984:193-205	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541
		Applicants: Stephen P.A. FODOR <i>et al.</i>	
		PAGE 45 of 46	
		Filing Date: October 28, 2003	Group Art Unit: 1634
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)			
	677.	Human Genome I: An International Conference on the status and future of research on the Human Genome, Official Program and Abstracts (pp.46-49), Oct. 2-4, 1989 (UTRF 293-294)	
	678.	Human Genome II: An International Conference on the status and future of research on the Human Genome, Official Program and Abstracts, Oct. 22-24, 1990 (AVI_134115-75; IAFP598371-430)	
	679.	International Workshop on Sequencing Hybridization, Program and Abstracts, Oct. 29-30, 1993 (IAFP 598513-598612)	
	680.	Kreindlin et al. A Sequenator for analysis of diagnostic and sequencing microchips. Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow (IAFP 598552-53)	
	681.	Report on the Sequencing by Hybridization Workshop, Moscow, SBH: An idea whose time has probably come, Nov. 19-20, 1991 (DOE 97-108)	
	682.	U.S. Congress, Office of Technology Assessment. Mapping Our Genes -Genome Projects: How Big? How Fast? April 1988:1-218	
	683.	Wolf Trap Genome Sequencing Conference: Program and Abstracts, Oct. 24-26, 1989 (IAFP 597859-597882)	
	684.	Broude et al., "Positional Sequencing by Hybridization," p. 297, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
	685.	Drmanac et al., "Genome Sequencing Machine," p. 60, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
	686.	Drmanac et al., "Sequence-Ready Maps Constructed from Shotgun Clone Libraries Hybridized with 200 7-mers," p. 61, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
	687.	Drmanac et al., "Toward Categorizing 100,000 Infant Brain cDNA Clones by Oligonucleotide Hybridization," p. 62, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
	688.	Crkvenjakov et al., "Discovery of Sequence Similarities in Large Clone Collections by SBH: Analysis of 22,000 cDNAs and a Model Subclone Library of Cosmid-Sized DNA," p. 48, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
	689.	Ivanov et al., "Oligonucleotide microchip on gel support as an instrument for DNA analysis," p. 296, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)	
Examiner		Date Considered	
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) PTO Form 1449		Attorney Docket No. AFFY-003/26US	Application No. 10/694,541	
		Applicants: Stephen P.A. FODOR <i>et al.</i>		PAGE 46 of 46
		Filing Date: October 28, 2003	Group Art Unit: 1634	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)				
	690.	Sindelar et al., "Parallel Synthesis of Large Numbers of Custom Oligomers in a Multichannel Format," p. 298, Abstracts of papers presented at the 1994 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1994)		
	691.	Drmanac et al., "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization," pp. 242-243, Abstracts of papers presented at the 1992 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1992)		
	692.	Drmanac et al., "An Alternative Large DNA Sequencing Method: The theoretical and Informational Feasibility of Sequencing by Hybridization," p. 44, Abstracts of papers presented at the 1992 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1992)		
	693.	Drmanac et al., "Sequencing by Hybridization (SBH): A Production Line to Sequence One Million M13 Clones Arrayed on Membranes," p. 110, Abstracts of papers presented at the 1992 meeting on Genome Mapping & Sequencing, Cold Spring Harbor Laboratory (1992)		
	694.	<u>Mapping Our Genes, Genome Projects: How Big, How Fast?</u> Congress of the United States Office of Technology Assessment, The Johns Hopkins University Press (1988)		
Examiner		Date Considered		
Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				